



IMAGING SYSTEM USER MANUAL

Version 3.0

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Department of Veterans Affairs
System Design and Development
VISTA Imaging

Preface

The purpose of this manual is to provide users with instructions on using the **VISTA** Imaging System V.3.0 software and system components. It includes explanations of the controls on the **VISTA** Imaging windows and instructions on performance of various clinical tasks.

The **VISTA** Imaging System documentation suite includes...

- Release Notes
- User Manuals
- Security Guide
- Technical Manual
- Installation Manuals

This manual also contains information about the options that comprise the **VISTA** Imaging System. Information about the various components such as servers, workstations, and background processors can be found in the Installation Guide.

This document is also available at the following Web address:

<http://vaww.va.gov/imaging>

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Chapter 1 Introduction

1.1 Functional Description

The **VISTA** Imaging System is an extension to the Veterans Health Information System Technology Architecture (**VISTA**) hospital information system that captures the following items (below) and makes them part of the patient's electronic medical record:

- Clinical images
- Scanned documents
- Electrocardiogram (EKG) waveforms
- Radiology images
- Other non-textual data files

Image and text data are provided in an integrated manner that facilitates the clinician's task of correlating the data and making patient care decisions in a timely and accurate way.

The system is designed to provide the treating physician with a complete view of patient data and, at the same time, allow consulting physicians to have access to the image and text data. It serves as a tool to aid communication and consultation among physicians -- whether in the same department, in different medical services, or at different sites.

The **VISTA** Imaging System is unique in that management of the medical images is an integral part of a hospital information system. Imaging workstations located throughout the hospital capture and display a wide variety of medical images including:

Medically Related Imaging Applications

Administrative:

Scanned Documents

- diagrams
- Advance Directive
- Patient Consent
- administrative reports

Medical facilities:

Outpatient Clinics

- telemedicine – to hospital
- clinical images
- documents

Nursing Home

- clinical images
- administrative

Women's Health Care Center

- bone densitometry
- ultrasound

- pelvic studies

Imaging Feature:

Patient ID

- clinics
- nursing home
- administrative

Imaging Services:

Medical Media

- lectures
- slides
- MS PowerPoint
- exhibits

Imaging Areas:

Presentations

- Auditorium
- Conference Rooms
- photographs

Medical Specialties

Cardiology

Echo Lab
Cath Lab
EKG Tracings

Dental

intra-oral & extra-oral images
panorex images
bitewings

Dermatology

external images
pathology specimens

GI

endoscopy
ultrasouond
ERCP (x-ray & color)
GI studies (x-ray)

Hematology

microscopic

Nuclear Medicine

Neurology

sleep studies
EMG

Nursing

wound assessment
wards
outpatient clinics
Home Based Patient Care

Oncology

tumor board

Pathology / Labs

microscope
electron microscopy
gross pathology samples
autopsy
hematology lab

Pulmonary

bronchoscopy

Radiology

MRI
CT
ultrasound
x-rays

Speech Pathology

modified barium swallows
rhino-laryngeal stroboscope

Surgery:

Cardiac

OR

Ophthalmology

OR

Eye Clinic – slit lamp, fundis
camera
field studies

Orthopedic

external images
OR

Podiatry

clinical images
OR

Thoracic

OR

Urology

OR - black/white & color

Vascular

OR
ultrasound

General Surgery

OR

Rheumatology

clinical

The **VISTA** Imaging System can be used to capture many types of images associated with a wide variety of procedures and examinations. The Imaging System has been extremely helpful to a number of services. Some use the imaging workstation during every case, others use it for selective cases. It serves five important purposes: documents findings, makes images accessible to clinicians within the hospital, assists in conference decision making and education, aids in follow-up treatment of patients and facilitates telemedicine.

In general, between three and ten images are collected per procedure. Some procedures lend themselves to predefinition of standard views to be recorded. In other cases, images are recorded to document abnormal or unusual findings.

Many lesions are difficult to describe in words, because terminology is not standard, and detailed description requires time and is subjective. For example, there are many kinds of ulcers. An image provides a more accurate representation of the kind of ulcer, including its size, appearance and relationship to surrounding structures. Even quantitative estimates such as 75-90% occlusion of a vessel do not convey the urgency of the situation as well as the image does.

Once images are captured, they are accessible, at all times, within:

- The medical center
- Community based outpatient clinics (CBOCs)
- Other VA sites

Traditional methods of storage such as video tape, 35 mm film, or glass slides require access to tape storage areas and viewing devices. Erased or missing tapes are a common problem. In addition to the setup time, video tape or film storage media requires more physician time to locate the pathology for a particular patient. Captured images are associated with the text report of the procedure and are stored on the network for distribution throughout the institution. Images are available immediately after collection to pathologists, surgeons, radiologists and primary care physicians. Requests for assistance in viewing cases will be decreased, although interest in the images has been seen to increase.

Many images are routinely reviewed during weekly conferences. At that time, pathology, radiology and other images are available. The entire group can go over all the images where everyone can see where the lesions are. Often decisions are made that could not otherwise be made. In some cases, the patient may be saved from a repeat procedure in the operating room.

Finally, the captured images are extremely helpful in follow-up care. Lesions that are being followed over time can be compared directly. If another physician performs the follow-up procedure, he or she has the benefit of the exact view that was seen previously. The effects of treatment can be examined objectively.

1.2 Legal Requirements

Image data should be afforded the same privacy and security protection as any other patient data. In some cases the image is more sensitive, because the patient's identity may be easily

recognized from the image. Access to image data requires valid access and verify codes and rights to specific menu options. Users should be sure to log off of workstations when they are through viewing or capturing images. A user will be asked to indicate the purpose and agree to protect patient privacy. The user will also be asked to remove any patient identifiers from the image before using it for the indicated purpose.

1.3 Security Measures

VISTA windows applications use menu option assignments to assign user access privileges. Within the **VISTA** Imaging package, menu options are used for image display and image capture for each specialty. In addition, some functions are only available to System Managers or those with a particular Imaging key.

1.4 Package Management

The images that are displayed are part of a patient's medical records; as such, they should not be erased or modified. Users and System Managers of the **VISTA** Imaging hardware and software should ensure that only authorized personnel use the **VISTA** Imaging hardware or software or view the images therein.

Chapter 2 Orientation

2.1 Computer Basics

This chapter covers the basic steps that are needed to access the *VISTA* Imaging System.

2.1.1 Navigation and Commands

The conventions used in this manual to describe navigation and commands can be found in Appendix A.

2.1.2 Using a Mouse in the Microsoft Windows Operating System

The instructions used in this manual that pertain to a two-button mouse are found in Appendix B.

2.1.3 Rebooting (restarting) the Workstation

This action may be necessary if the workstation appears to be “locked” – that is, it does not respond to any of the inputs from keyboard and the mouse. This action should be performed only after having consulted with the IRM imaging computer specialist.

Push the RESET button on the front of the workstation. If there is no RESET button, power the workstation off and then on. It will reboot (restart). It will perform a virus check and load all required software. This takes about 30 – 60 seconds. When the reboot process is complete, the user should be able to sign back into the workstation.

2.2 Summary Notes for Specific Clinical Practices

2.2.1 Introduction

This section explains the specific points that the *VISTA* Imaging System users from specific clinical practices need to consider.

2.2.2 Summary Notes for GI Users of the *VISTA* Imaging System

The *VISTA* Imaging System has been extremely helpful in the gastroendoscopy laboratory. The Imaging System is used routinely during upper endoscopies, colonoscopies, flexible sigmoidoscopies, and ERCP procedures (saving both color and radiology images). It serves four important purposes:

- Documents findings
- Makes images accessible to clinicians within the hospital
- Assists in conference decision making and education
- Aids in follow-up treatment of patients

The imaging workstation is a part of every GI endoscopy procedure. Approximately one third of procedures are abnormal, and approximately three images are captured during these procedures. Images are generally not captured during normal examinations.

Once images are captured, they are accessible, at all times, within...

- The medical center
- Community based outpatient clinics (CBOCs)
- Other VA sites

Traditional methods of storage, such as videotape, require access to tape storage areas and players. Erased or missing tapes are a common problem. In addition to the setup time, videotape storage media requires more physician time to locate the pathology for a particular patient.

Captured images are associated with the text report of the procedure and are stored on the network for distribution throughout the institution. Images are available immediately after collection to pathologists, surgeons, and primary care physicians. Requests for assistance in viewing cases are decreased.

GI lesions are often difficult to describe in words, because terminology is not standard, and detailed description requires time and is subjective. For example, there are many kinds of ulcers. An image provides a more accurate representation of the kind of ulcer, including its size, appearance and relationship to surrounding structures.

GI images are routinely reviewed during weekly surgical conferences. At that time, pathology, radiology and other images are generally available also. The entire group can go over all the images so everyone can see where the lesions are. Often decisions are made that could not otherwise be made. In many cases, the patient is saved from a repeat endoscopy in the operating room.

Finally, the captured images are extremely helpful in follow-up care. Lesions that are being followed over time can be compared directly. If another physician performs the follow-up procedure, he or she has the benefit of the exact view, which was seen previously. The effects of treatment can be examined objectively.

2.2.3 Summary Notes for Cardiology Users of the VISTA Imaging System

The VISTA Imaging System has been extremely helpful in the cardiology laboratories. It is routinely used during cardiac catheterization studies and echocardiography. Typically, a predefined set of images is captured by a fellow or technologist, and these can be quickly reviewed by supervisors and fellow staff. At sites with the EKG interface, all of a patient's EKG studies are available on the Imaging workstation. The VISTA Imaging System serves four important purposes:

- Provides documentation of findings
- Makes images accessible to clinicians within the hospital
- Assists in conference decision making and education

- Aids in follow-up treatment of patients.

Lesions are often difficult to describe in words because terminology is not standard, and detailed description requires time and is subjective. Even rough quantification may not convey the correct meaning or the sense of urgency that an image provides. For example, a 75-90% occlusion describes a considerable range. An image provides a more accurate representation of the lesion, including its size, appearance, environment, and relationship to surrounding structures.

Once images are captured, they are accessible, at all times, within...

- The medical center
- Community based outpatient clinics (CBOCs)
- Other VA sites

Traditional methods of storage such as 35mm film or videotape require access to storage areas and specialized equipment. Erased or missing tapes and film are a common problem. In addition to the setup time, these types of media require more physician time to locate the pathology for a particular patient. Captured images are associated with the text report of the procedure and are stored on the network for distribution throughout the institution. Images are available immediately after collection to surgeons and primary care physicians. Requests for assistance in viewing cases are decreased.

Cardiology images can be routinely reviewed during weekly conferences. At that time, surgery, pathology, radiology, electrocardiogram and other images can generally be available also. The entire group can go over all the images where everyone can see where the lesions are. Often decisions can be made that could not otherwise be made.

Finally, the captured images are extremely helpful in follow-up care. Lesions that are being followed over time can be compared directly. If another physician performs the follow-up procedure, he or she has the benefit of the exact view that was seen previously. The effects of treatment can be examined objectively. EKG's are especially helpful in the emergency room. Old EKG's are always available to access current changes.

2.2.4 Summary Notes for General Medical Procedures Users of the VISTA Imaging System

The VISTA Imaging System has been extremely helpful to a number of services. Some use the imaging workstation during every case -- others use it for selective cases. It serves four important purposes:

- Documents findings
- Makes images accessible to clinicians within the hospital
- Assists in conference decision making and education
- Aids in follow-up treatment of patients.

A variety of medical specialties can be selected under medical procedures. These can be used for a wide variety of procedures that do not have a specific Medicine package module. The user can then use the Medicine package to create a report containing the procedure name, summary of results, indications, assessment and plan.

In general, between three and ten images are collected per procedure. Some procedures lend themselves to predefinition of standard views to be recorded. In other cases, images are recorded to document abnormal or unusual findings.

Many lesions are difficult to describe in words, because terminology is not standard, and detailed description requires time and is subjective. For example, there are many kinds of ulcers. An image provides a more accurate representation of the kind of ulcer, including its size, appearance and relationship to surrounding structures. Even quantitative estimates such as 75-90% occlusion of a vessel do not convey the urgency of the situation as well as the image does.

Once images are captured, they are accessible, at all times, within...

- The medical center
- Community based outpatient clinics (CBOCs)
- Other VA sites

Traditional methods of storage such as videotape, 35 mm film, or glass slides require access to tape storage areas and viewing devices. Erased or missing tapes are a common problem. In addition to the setup time, videotape or film storage media requires more physician time to locate the pathology for a particular patient. Captured images are associated with the text report of the procedure and are stored on the network for distribution throughout the institution. Images are available immediately after collection to pathologists, surgeons, radiologists and primary care physicians. Requests for assistance in viewing cases may be decreased, although interest in the images has been seen to increase.

Many images are routinely reviewed during weekly conferences. At that time, pathology, radiology and other images are generally available also. The entire group can go over all the images where everyone can see where the lesions are. Often decisions are made that could not otherwise be made. In some cases, the patient may be saved from a repeat procedure in the operating room.

Finally, the captured images are extremely helpful in follow-up care. Lesions that are being followed over time can be compared directly. If another physician performs the follow-up procedure, he or she has the benefit of the exact view that was seen previously. The effects of treatment can be examined objectively.

2.2.5 Summary Notes for Anatomic Pathology Users of the VISTA Imaging System

The VISTA Imaging System is an important tool for managing digitized images in anatomic pathology. The VISTA Imaging System can be used to archive pathology images for distribution with the institution for professional and student education. Because of the large number of individual images present in a single glass slide, it is not cost-effective to replace an entire glass

slide with a set of images. Rather, the anatomic pathologist should select individual views from a slide of interest, in order to demonstrate the diagnostic or other interesting features in a slide. With a properly installed interface between the microscope and the **VISTA** Imaging camera, suitable lighting, and good optics in the microscope, diagnostic-quality images can be captured. However, since all the images on a slide cannot be captured cost-effectively, the slide must be kept as a reference. The captured image has the advantage that it does not fade over time.

Once the desired images have been captured by the anatomic pathologist, they are immediately appended to the patient's electronic record, and may be viewed by any person in the institution (and at other VA sites) with an imaging workstation and access to that patient's record. This includes all the workstations within the anatomic pathology department (other attending pathologists, resident's room); all the clinical services with workstations (operating room, medicine, surgery, endoscopy, dermatology, bronchoscopy); and the institution's auditorium, where interdepartmental conferences are held.

Pathology images are routinely reviewed during weekly tumor board conferences. At that time, pathology, surgery, endoscopy, radiology and other images are generally available also. The entire group can go over all the images so everyone can see where the lesions are.

It has been found that having images available on the system has increased the resident and staff interest in pathology and has improved communications.

2.2.6 Summary Notes for Surgery Users of the VISTA Imaging System

(Contributed by Dr. Robert Sawyer, Baltimore VAMC.)

One of the most common reasons to photograph abnormal findings in a teaching institution is for subject related lectures and discussions with medical students and residents. Another need is to better document the physical examination for medical documentation purposes, which more effectively allows physicians who have not examined a patient before to appreciate subtle (but potentially important) changes from a prior clinic visit. For several years in head and neck cancer clinics, I have recorded post operative/post radiation oral and laryngeal examinations on videotape for this purpose and it has helped to detect earlier recurrent disease. However, storage and retrieval of those tapes is a real challenge. The imaging workstation now makes such information almost immediately available throughout the hospital, including the operating room where a quick comparison between the intra-operative evaluation and the clinic exam can at times be helpful. Microscope exams of ears and eyes, ulcers in vascular or podiatry clinic, and GI endoscopy are a sampling of other uses.

Routinely now, we discuss cases in the Multi-Disciplinary Tumor conference with projected images stored on the **VISTA** system. (We no longer use a 35 mm projector.) We commonly project pertinent pictures of GI endoscopy, bronchoscopy, clinic exams, radiographs, etc. combined with intra-operative pictures, and histology.

Communication between the operating room and the pathologist has notably improved, especially in discussing frozen section examinations of specimen margins in complex cases.

During surgery, a series of images are captured showing the removal of a specimen with orienting anatomical details visible. Then the removed specimen is placed on a towel or paper. Where possible this is in the same orientation and near the site of removal to better orient the pathologist, and for such complex things as a Mohs technique frozen section, both the patient and specimen are marked with ink and photographed together. The operating rooms are linked with intercoms and when the pathologist receives the specimen and views the **VISTA** images, subtle questions and answers are passed back and forth from one team to the other. Interesting pathology can immediately be captured and “fed back” to the operating room.

Recently one of our staff captured a series of teaching slides from a very unusual case into the **VISTA** Imaging System. Our Medical Media Service had 35 mm slides, generated directly from those **VISTA** images ready for him in order to discuss the case at the adjoining university hospital as he left the building that evening.

Once images are captured, they are accessible, at all times, within...

- The medical center
- Community based outpatient clinics (CBOCs)
- Other VA sites

2.2.7 Summary Notes for Radiology Users of the *VISTA* Imaging System

The **VISTA** Imaging System is particularly important in medical centers that operate filmlessly. Clinicians need to view the images resulting from radiology exams. In order to benefit from filmless operation, medical centers must provide a mechanism to do this. The **VISTA** Imaging System allows clinicians to see radiology images, associated with orders and reports, on any clinical workstations in the hospital. The **VISTA** Imaging System workstations allow modification of the contrast (window) and brightness (level) of the radiology image. This has been found to provide advantages in many cases in viewing films. There are often difficulties with films being borrowed, and then being unavailable for interpretation in the radiology department.

The **VISTA** Imaging System will allow direct interface to systems such as PACS (Picture Archiving and Communications Systems) or DICOM 3.0 radiology devices for direct acquisition of digital images. Use of an x-ray laser scanner for film digitization is also supported.

Higher resolution, 2k x 2k multimonitor displays are currently being integrated with the **VISTA** Imaging workstation to allow filmless diagnostic interpretation of images. These meet the standards for teleradiology diagnosis.

2.2.8 Summary Notes for Wound Care Specialists of the *VISTA* Imaging System

The **VISTA** Imaging System provides a new method for documenting wounds and facilitating consultation about them. It is routinely used as part of standard wound care practice.

The **VISTA** Imaging System serves five important purposes:

- Documents findings

- Makes images accessible to clinicians within the hospital
- Assists in conference decision-making and in education
- Aids in follow-up treatment of patients
- Allows patients to assume a participatory role in the care of their own wounds

A commercially available digital camera is used during wound care practices when the clinician deems it important to maintain a visual image of the wound for future reference. The images are downloaded from the camera and captured on a **VISTA** Imaging workstation. Captured images are associated with the TIU text report of the procedure. This supports the processes by which clinicians have traditionally documented wound findings. Visual “marks” next to the TIU progress note title prompt the clinician to open Imaging and view the linked images. These images are stored on the network for distribution throughout the VA. Images are available to all clinical users of the Computerized Patient Record System immediately after collection.

Once an image is captured, it is accessible at all times at:

- The medical center
- Community-based outpatient clinics (CBOCs)
- Other VA sites

Traditional methods of wound documentation are text-based. If photography is used, the pictures are not readily available at all points of patient care delivery. Traditional text based documentation of wounds is subjective and limited to a description of a few sentences, minimizing a visually rich information source. This causes the loss of many of the determining factors upon which clinical judgment is based, such as the intensity of color, or the sheen of surrounding tissue. With digital imaging, the “information” found in the visual assessment is captured for documentation purposes as well as for a metric against which future wound assessments can be compared.

The use of visual images allows new providers a much-improved perspective of the wound, and avoids the traditional, limiting point-in-time assessment of a patient’s wound.

Once captured, the images become a permanent part of the patient’s record, aiding one-on-one patient teaching to reinforce positive healthcare behavior. The images are also used to train staff members as part of the organized Wound Care Team activities.

(Contributed by Linda Fischetti RN MS, Informatics Coordinator, Washington VAMC)

2.3 A Word About Scanning Clinical Documents

VISTA Imaging provides the capability to scan documents of various sorts. Single and multi-page documents are supported. Annotated diagrams can be included along with the images from a procedure. If reports are produced outside of **VISTA**, they can be scanned into the system. EEGs, electronmicrographs, or other printed procedure data can also be scanned, either as black-and-white or color documents.

2.4 Medical Applications for Imaging

2.4.1 Following Patient Treatment Progression

2.4.1.1 Introduction

You can use the *VISTA* Imaging System to...

- Capture images that depict the progression of a disease process, or a medical or surgical treatment. This is usually done by imaging the same lesion on successive occasions.
- Capture images during patient visits to outpatient clinics, emergency rooms, and in hospital wards.

Various hospital staff capture these images, including doctors, nurses, and medical technicians.

2.4.1.2 Gathering Patient Images for a Report

During treatment, hospital staff can take digital photographs of wounds and append these photographs to the patient's electronic record. They may be used to supplement a report.

2.4.1.3 Gathering Patient Images for Legal or Medical Care Cost Recovery

In the past, documents such as photographs, X-ray film, slides, and photocopies have been inserted in the file folders of patients. These documents are used by many medical services and are not always available when needed. New *VISTA* Imaging System capabilities make all of the patient's digital records available at any Clinical workstation.

2.4.2 Collecting Research Data

2.4.2.1 Introduction

Medical research is conducted on an ongoing basis at all medical centers. Researchers are faced with the need often to store text as well as images, to document the stages of their studies. Storing and retrieving large amounts of visual data are tasks well suited to computerization.

2.4.2.2 Collecting Images

Most of the medical equipment used by patient care providers is capable of producing digital images. Those units that are not able to produce a direct digital image usually provide a video display. The *VISTA* Imaging System equipment can be configured to attach to these medical systems and provide a means to save images in patient files. Other systems can provide these images as well. Some examples of these systems are...

- Still and motion video cameras
- Black and white or color scanners

Note: The *VISTA* Imaging System allows users to add descriptive text to the images while they are being saved.

2.4.2.3 Organizing Data

You can use the *VISTA* Imaging System to sort the images you collect and associate them with text descriptions and reports. Sorting capabilities will be enhanced in future versions.

2.4.2.4 Presenting Research

You can use the *VISTA* Imaging System to export images to commercial off-the-shelf software. The file formats of the exported files are in common, standard formats. You can then use your commercial software to add the images to desktop presentation software.

2.4.3 Preparing for Conference Presentations

2.4.3.1 Introduction

A major use of the *VISTA* Imaging System is for patient presentations during conferences.

2.4.3.2 Capture of Images for a Conference

If the images to be shown are not already in the system, they should be captured from their storage media (e.g., microscope slides, videotapes, photographs, films). Follow the instructions in Chapter 6 for capturing images. The image description field can be used for any notes specific to the image. Be sure to link the images to their corresponding procedure or report. It is recommended that you make written notes of the patient identifications and images for the conference.

2.4.3.3 Testing Display Workstation Before Conference

Before the conference, a member of the conference team should check the workstation in the conference room to be sure that everything is working properly. During your test, you should view the images you plan to use during the presentation to make sure that there are no unexpected workstation, projector, server, or *VISTA* problems. Viewing the images will also cause the *VISTA* Imaging System to move jukebox images to magnetic storage for more rapid display during the presentation. If you encounter a problem during the test, notify your IRM service immediately.

2.4.3.4 Creating Slides From Online Images

The Medical Media Service at VA Medical Centers can generate 35 mm slides directly from the images in the *VISTA* Imaging System. Slides generated this way could be used in presentations where the *VISTA* Imaging System is not available.

2.4.4 Compiling Data for Consult with Clinical Practitioners

2.4.4.1 Introduction

Clinical practitioners and specialists often use medical images during consultations. The *VISTA* Imaging System enables users to collect images that can be used to make decisions about patient care.

2.4.4.2 Documenting a Patient's Condition During a Clinic Visit

The clinician can use imaging equipment (such as a video camera) to enhance a description of a medical condition. The images can serve as a basis for further treatment. A comparison of previous images to later results can reveal the progression of treatment.

2.4.4.3 Appending Imaging Data

Each specialist that treats the patient can append his or her visual data to the patient's medical record. Each patient care provider can then track the record of the medical condition using the data accumulated by their predecessors.

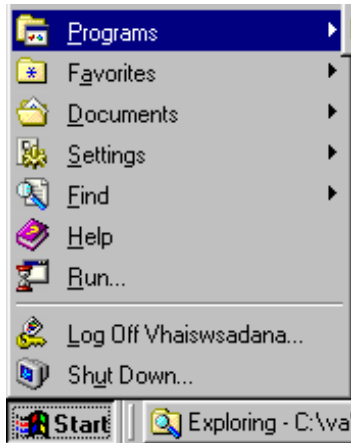
2.4.4.4 Conferencing Between Clinicians and Specialists

In live conferences or teleconferences, several clinicians and specialists can view patient images. Medical staff from a VA medical center can share that data with any other VA medical center by granting them remote access to the **VISTA** files.

Chapter 3 Quick Start -- Guide to Image Display

3.1 STEP 1: Start VISTA Imaging Display

At the bottom left side of your Windows screen is the START button.

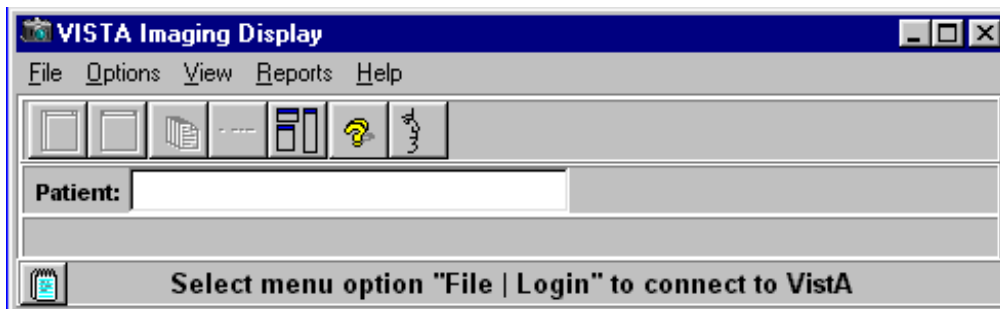


1. Click on START and move your cursor to Programs.
2. Move to **VISTA Imaging Programs**.
3. Move to **VISTA Imaging Display 32bit** and click.

Your Imaging System Manager will configure the **VISTA** Imaging Display to appear before or after you logon to your **VISTA** system.

If the **VISTA** logon window appears, then enter your Access and Verify codes (these are provided by your IRM Service).

The **VISTA** Imaging Display Window appears as follows:



3.2 STEP 2a: Select the Demo,Patient from *VISTA*

(A sample patient is used for training.)

1. If the *VISTA* System does not have a Demo,Patient....

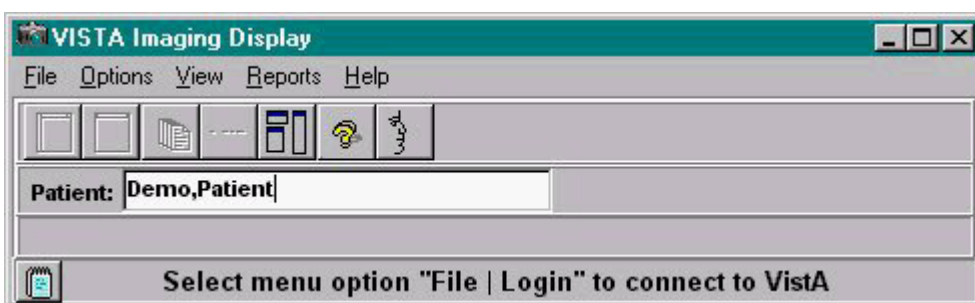
Go to Section 3.3 STEP 2b: Select the Demo,Patient from the *VISTA* Imaging Application.

2. Display the images for the Demo, Patient...

Each facility should create a Demo,Patient to train users of the *VISTA* Imaging System.

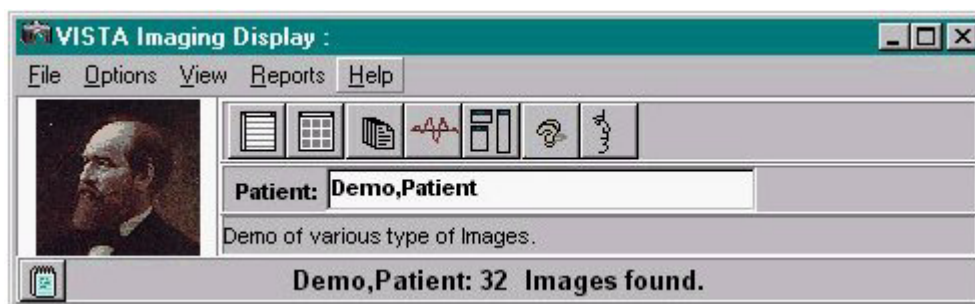
3. If your site has already created this sample patient (with images)...

Enter the name “Demo,Patient” in the Patient text box and press the Enter key.



The *VISTA* Imaging Display Window will show the Demo,Patient. The Abstracts Window will also appear.

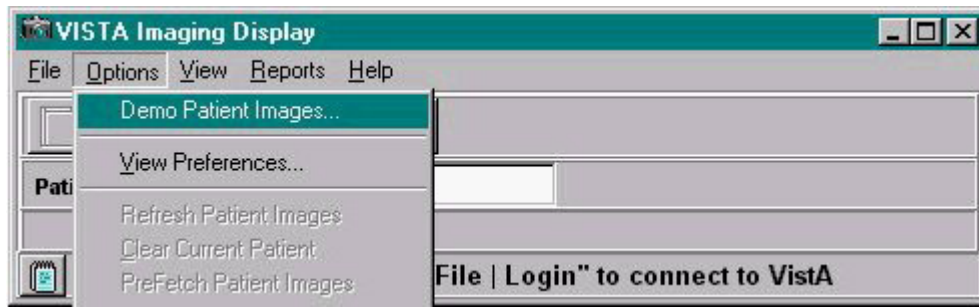
4. If the window appears as follows, skip **STEPS 2b & 2c**.



3.3 STEP 2b: Select the Demo,Patient from the VISTA Imaging Application (A sample patient is used for training.)

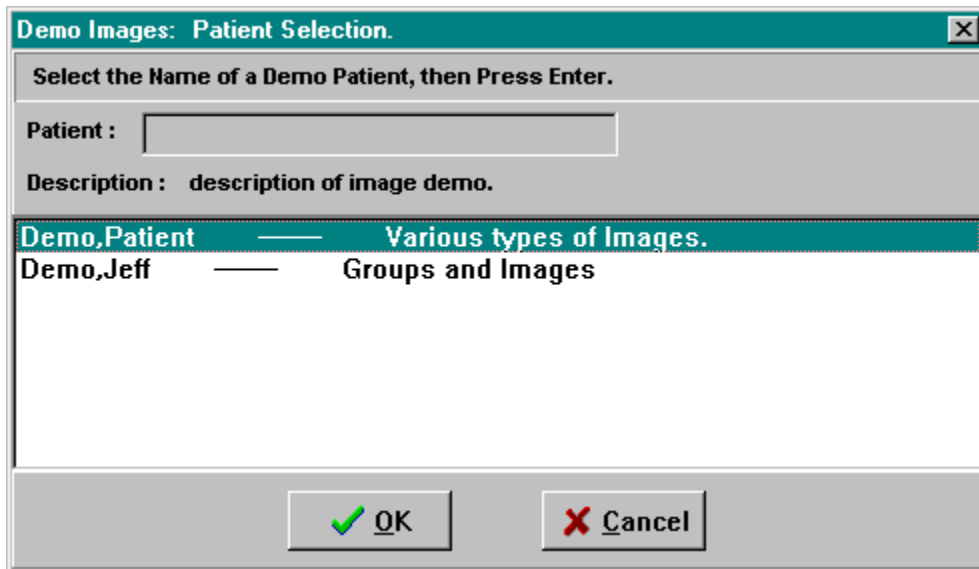
The VISTA Imaging Display window has the following menus:

File, Options, View, Reports, Help.



Click on “Options” and then click on “Demo Patient Images...”

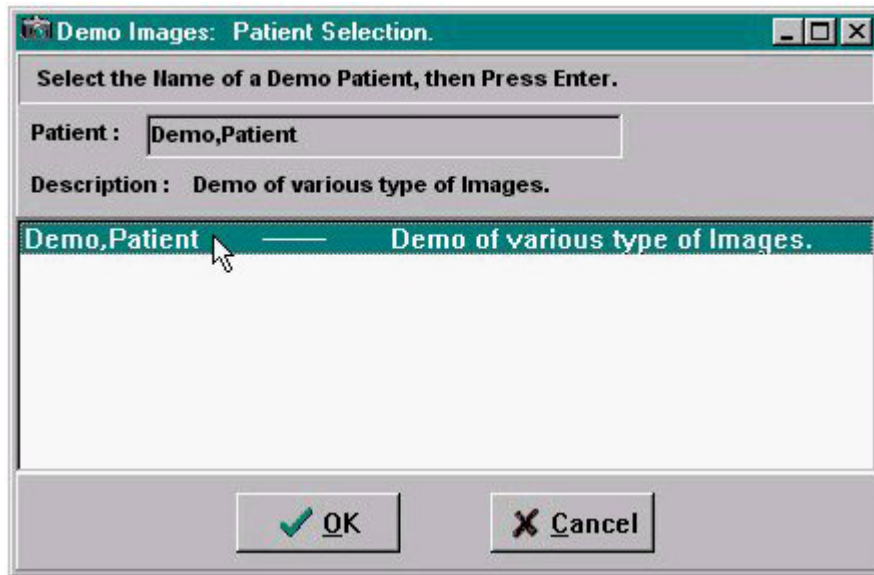
The Demo Images: Patient Selection Window presents a list of patients.



3.4 STEP 2c: Select the Demo,Patient from the *VISTA* Imaging Application

To select the patient...

1. Click on Demo,Patient in the list.
 - This is an alternative to selecting a demo patient from *VISTA*.
 - Notice that the name of the patient selected is now displayed => **Patient: Demo,Patient.**



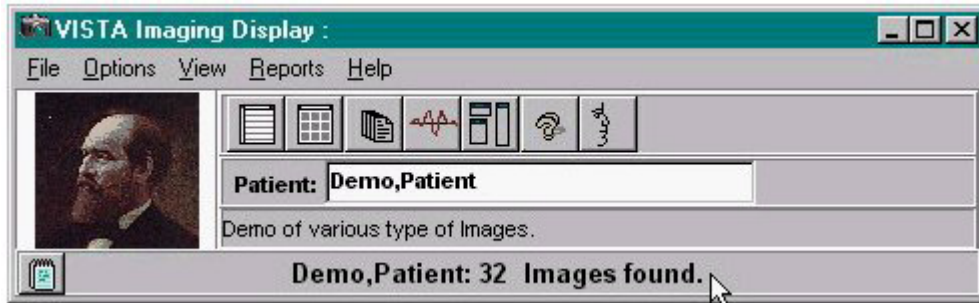
2. Click on the OK button...

The *VISTA* Imaging Display now shows the images for the Demo,Patient.

3.5 STEP 3: Examine the *VISTA* Imaging Display Window

(View patient information)

Examine the changes in the *VISTA* Imaging Display Window and the Abstracts Window.



Notice that...

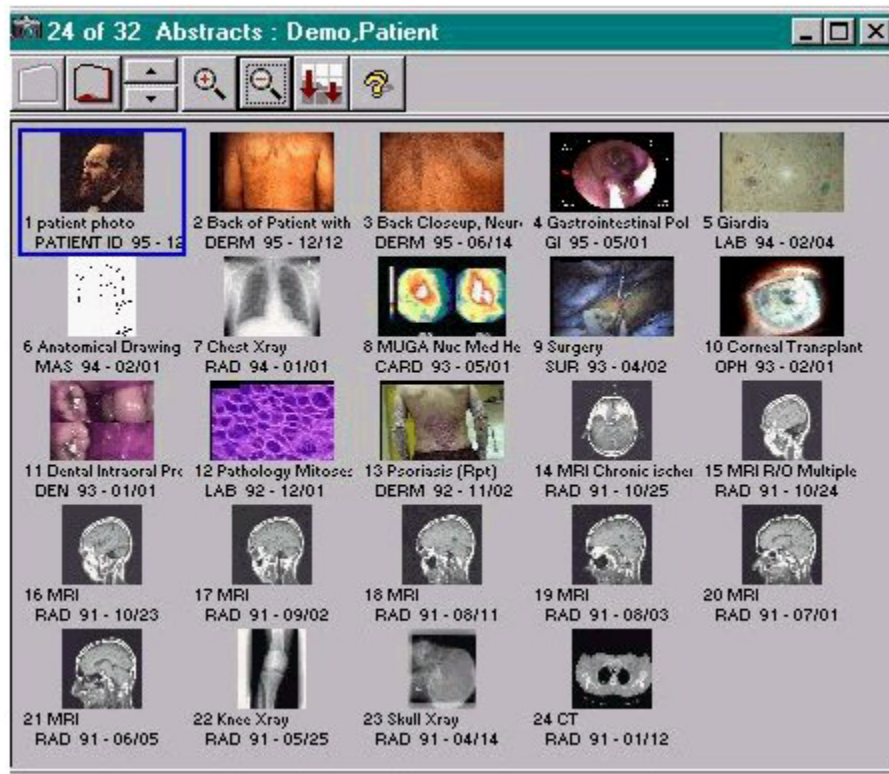
- The name of the patient selected is now displayed => **Patient: Demo, Patient.**
- The status bar of the window shows => **32 Images found.**
- A Photo ID is displayed for this patient.

3.6 STEP 4: Examine the Abstracts Window

(A graphic table of contents)

The Abstracts Window will display up to 24 images at one time.

The window appears as follows:

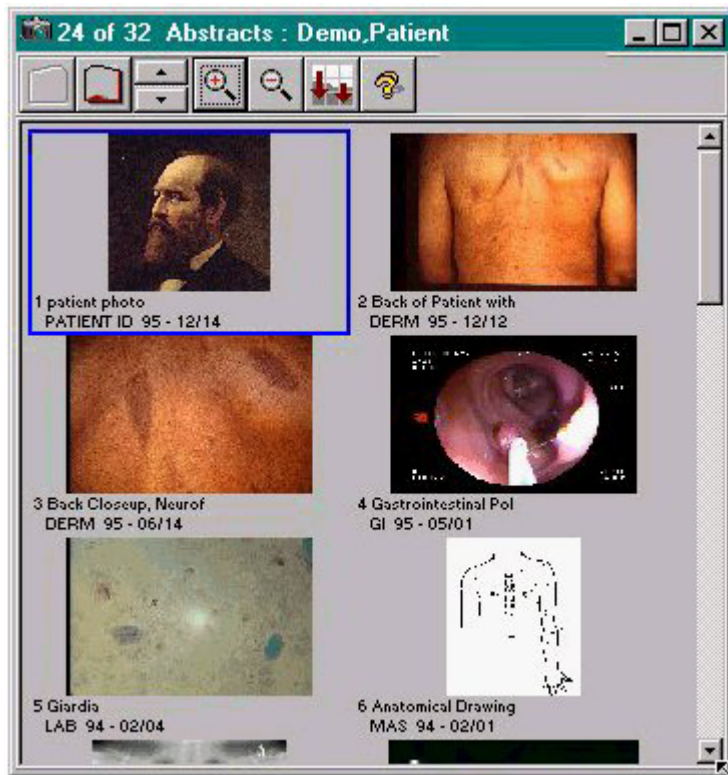


Notice that...


- The caption of this window tells us => **24 of 32 Abstracts: Demo, Patient.**
- There is a **BLUE** box around the first abstract image.
- Each abstract has information under it:
 - (line 1) The sequence number and a description of the image
 - (line 2) The procedure followed by the date it was performed


3.7 STEP 5: Resize the Abstracts and the Abstracts Window

(Customize your view)



Use your mouse to resize the Abstracts Window to display only 6 abstract images by dragging the side and top of the Abstracts Window.

1. Locate the  magnifying glass with the “+” and click on it a few times (Notice that abstract images become larger).
2. Use your mouse to resize the Abstracts Window to display only 6 abstract images.

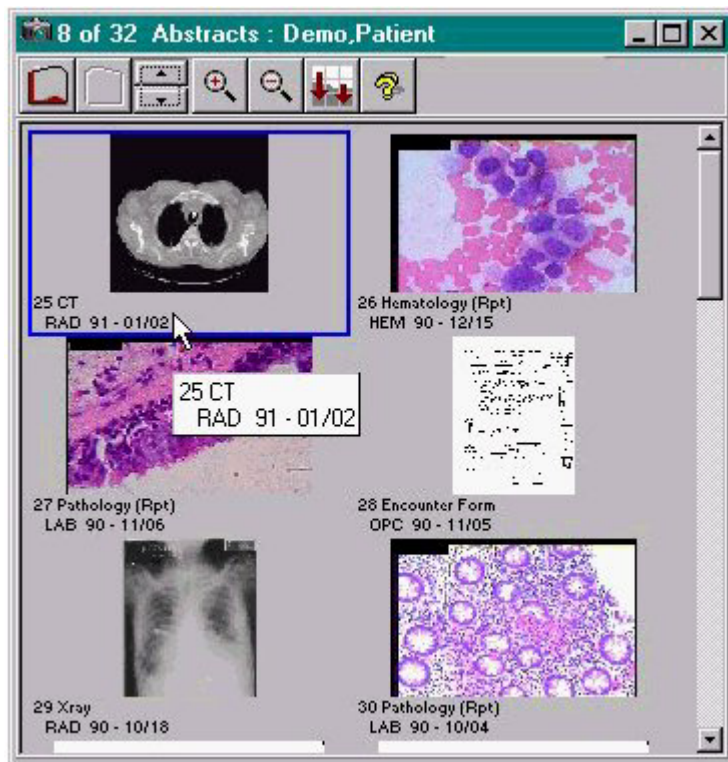
Note: The  magnifying glass (with the “-”) will decrease the size of the abstract images.

3.8 STEP 6: Advance the Abstract Window

(Search for images)

Click on the “Next Page” button 

The window looks like this:



Notice that...

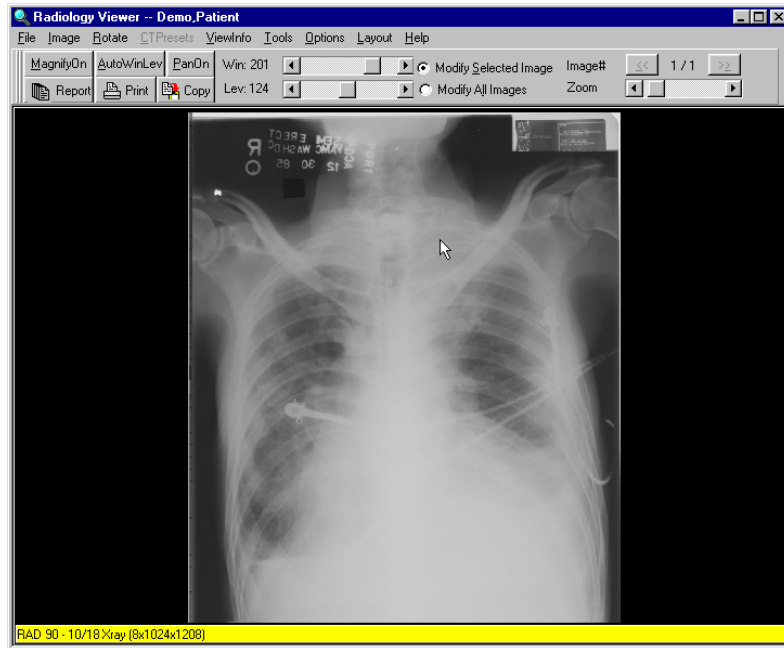
- The caption of this window tells us => **8 of 32 Abstracts: Demo, Patient.**
- Abstracts are loaded into the Abstracts Window 24 at a time.
- The last group of abstracts for this patient contains 9 images.
- There is a **BLUE** box around the first abstract (image number 25).

3.9 STEP 7: Select an X-ray

(View the full size image)

Click on abstract number 29 (a chest x-ray).

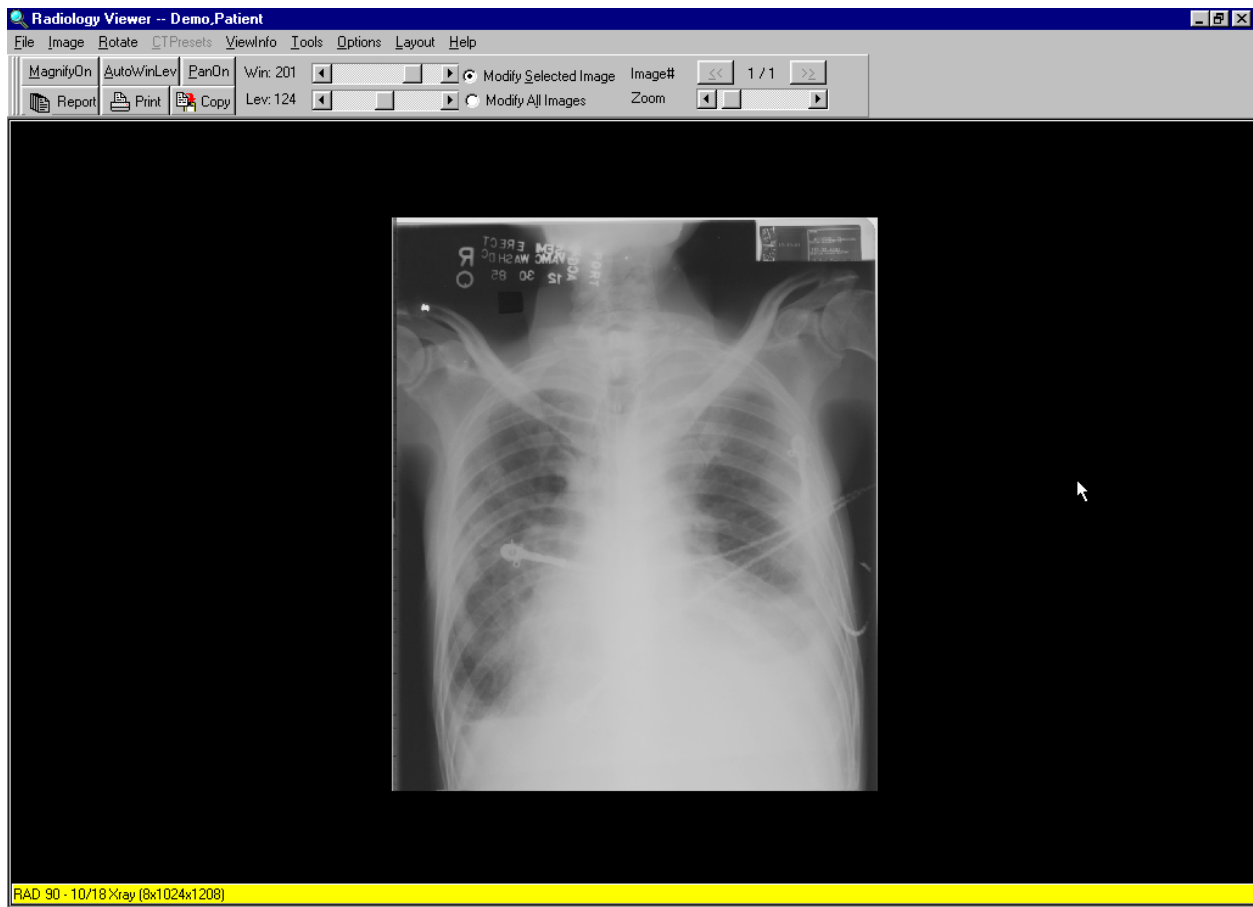
The Radiology Viewer appears with the full-size x-ray.



3.10 STEP 8: Viewing an X-ray (1 of 4)

(Examining radiology images)

Click on the window “square” in the upper right-hand corner. The window will fill the entire screen.



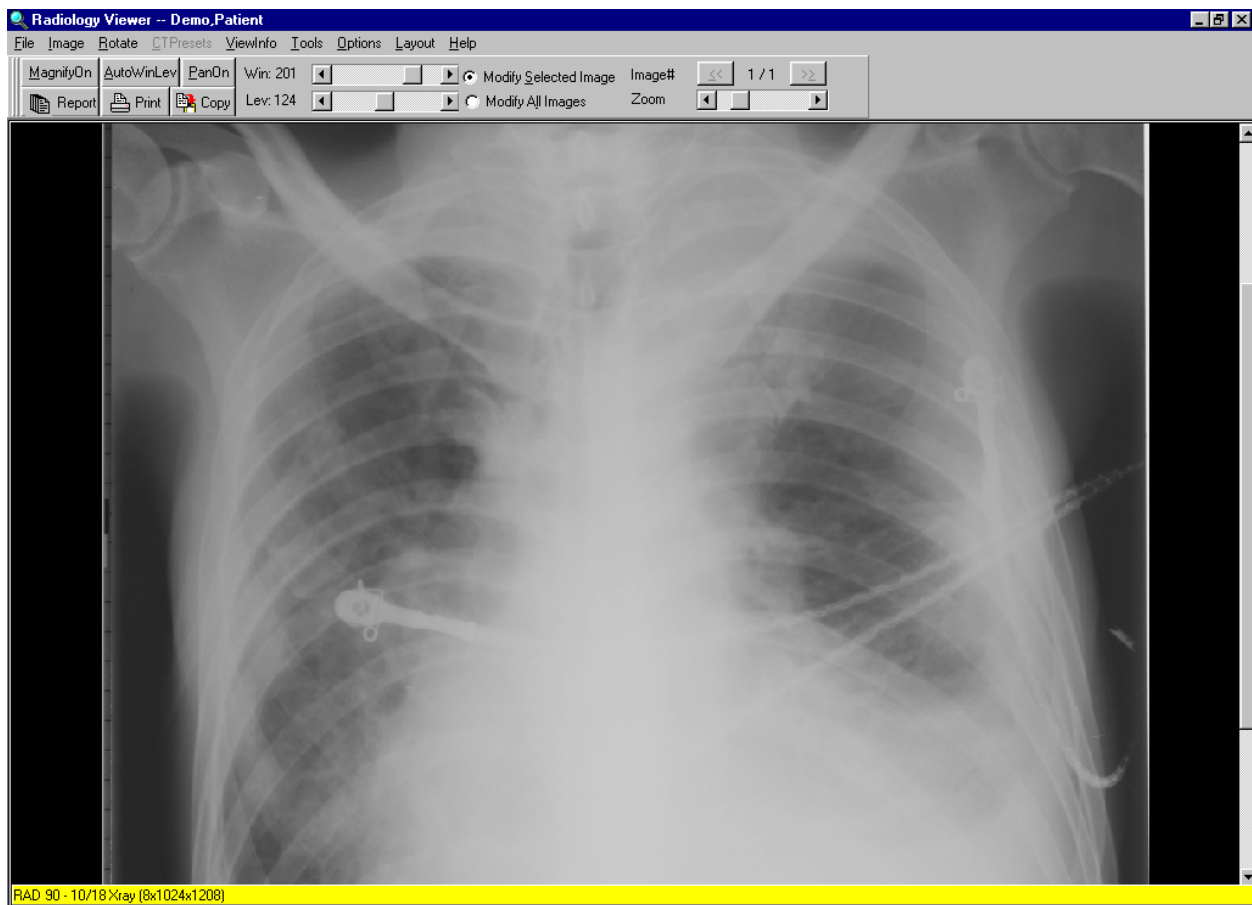
3.11 STEP 8: Viewing an X-ray (2 of 4)

(On the top right portion of the window is the control to enlarge the x-ray)




Click and hold the left mouse button on the square between the two arrows (the slider) and move it toward the right. This will “Zoom” the image.

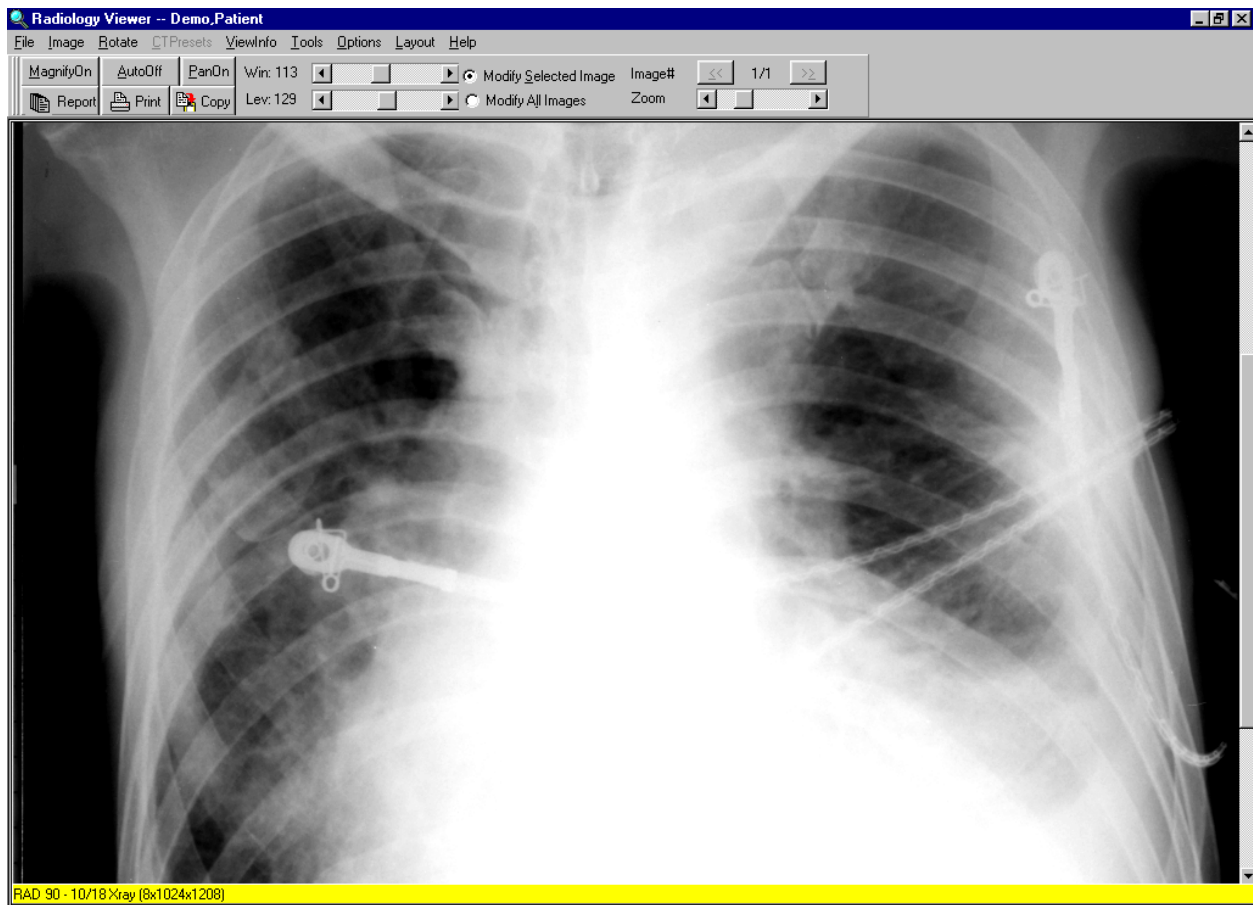
The Radiology Viewer will look like this:



3.12 STEP 8: Viewing an X-ray (3 of 4)

1. To view details on the right side of the x-ray, click on the  button.
2. Imagine a rectangle covering the right side of the x-ray. You would hold down your left mouse button on the top left of the “rectangle” and move it to the bottom right.
3. Release the left mouse button.

The image looks like this:

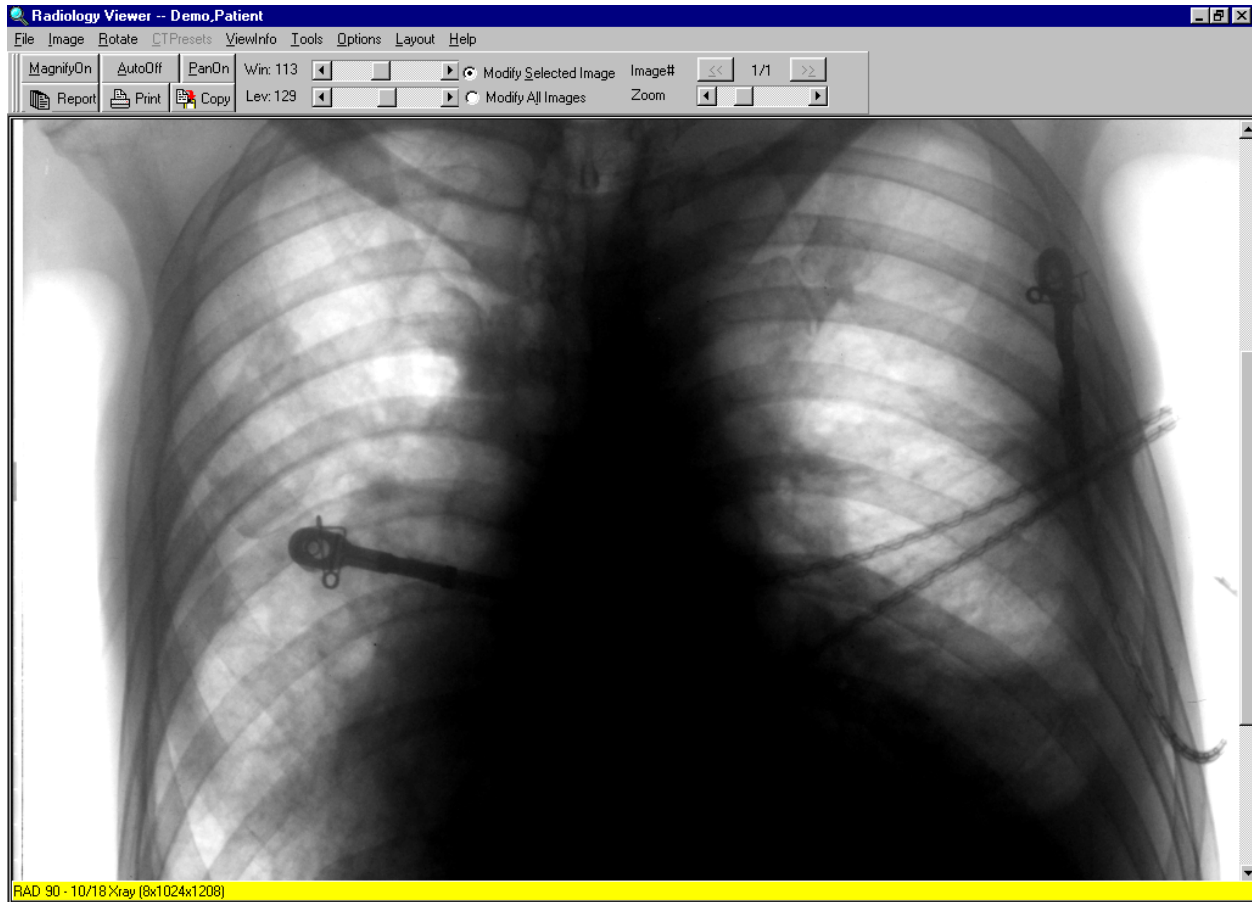


The entire image has been automatically adjusted to brightness and contrast levels that allow the best viewing of the selected rectangle. This process can be used to select any area of the image for optimized viewing.

3.13 STEP 8: Viewing an X-ray (4 of 4)

1. Click on the menu item “Image” and click on the option “Invert (Reverse)”.

The image will now look like this:

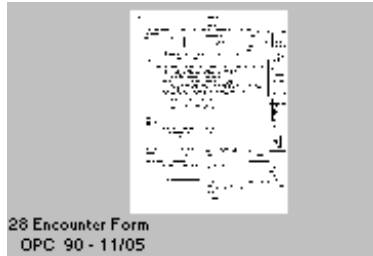


2. Close the Radiology Viewer Window by clicking on the “X” in top right corner of the window.

3.14 STEP 9: Select and View a Scanned Document (1 Of 5)

(Obtain & examine the full size document)

Click on the document abstract (number 28) in the Abstract Viewer Window.



The Document Image Window looks like this:

Document Image -- Demo.Patient

OPC 90 - 11/05 Encounter Form

U.S. Q-0: 1866 Zoom the Image

EXHIBIT 1

PCC AMBULATORY ENCOUNTER RECORD

MRSA-802 (3/84) PL 96-511 M.A.

DATE: GENL

NOTE TIME: 10.15 PM

FROM: Emergency

DATE RECEIVED: _____

APPEAR	SYNOPSIS	CHANGES	CHANGES IN DATE	PREVIOUS	DS	INITIALS
SX-3	SX-6 SX-7			1	01	PME
				1	00	AAN

CHIEF COMPLAINT: ① % ② EARACHE, SL. FEVER x 2 DAYS 99°

HISTORY OF PRESENT ILLNESS: ② OVERDUE FOR DIABETIC CLINIC

PHYSICIAN'S ASSESSMENT: S: AS ABOVE - % ② EARACHE WITHOUT DISCHARGE x 2-3 DAYS
① FEVER, EMESIS ③ DIARRHEA, SHAKING CHILLS
NO RECENT SWIMMING OR WATER IN EARS
NO FOREIGN OBJECTS INTO EARS

PHYSICIAN'S PLAN: O: AFEBRILE - NON TOXIC APPEARING - NAD
HEENT - ② TM RED WITHOUT PEPE NO DISCH. AT OALM

TIME: 1:00 PM

DATE: 11/05

INITIALS: PME

DATE: 11/05

INITIALS: AAN

3.15 STEP 9: Select and View a Scanned Document (2 Of 5)

Click on the “square” in the top right corner of the window.

The Window will fill the screen.

The screenshot shows a software window titled "Document Image -- Demo.Patient". The window contains a scanned document with the following text:

☆ U.S. GPO: 1988-208-591/90224

EXHIBIT 1

PCC AMBULATORY ENCOUNTER

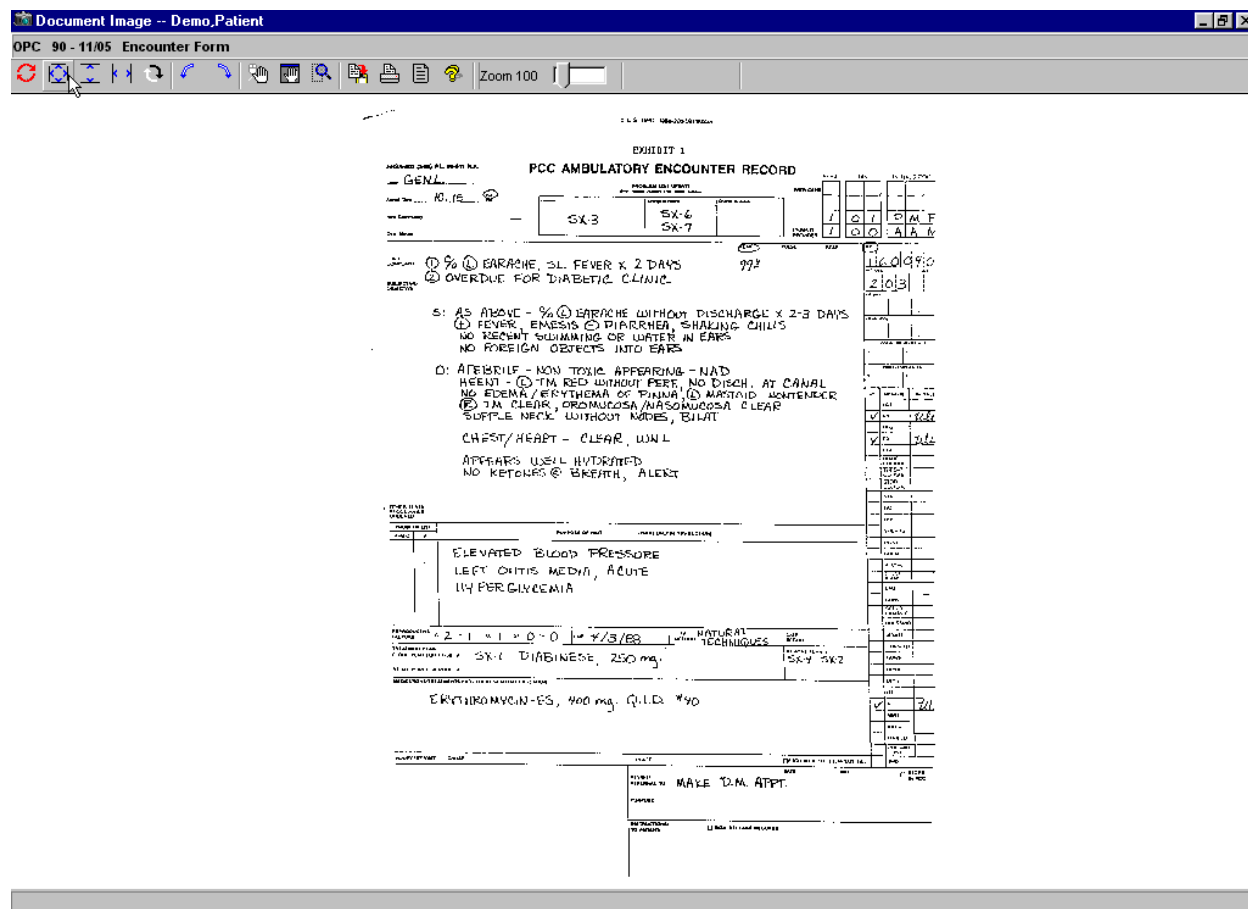
PROBLEM LIST UPDATE
Show Problem Numbers from Health Summary.

Remove	Change to Inactive	Change to Active
SX.3	SX.6 SX.7	

3.16 STEP 9: Select and View a Scanned Document (3 of 5)

Click on the “Fit Image in Window”  button (on the top left).

The Document Image window will look like this:



The screenshot shows a software window titled "Document Image -- Demo Patient" with a toolbar at the top. The main area displays a scanned medical document titled "EXHIBIT 1 PCC AMBULATORY ENCOUNTER RECORD". The document is for a patient named "GENL" and includes various medical notes and a table of vital signs.

EXHIBIT 1 PCC AMBULATORY ENCOUNTER RECORD

Patient Name: GENL
 Date: 10/18/05
 Age: 77
 Sex: M
 Race: W
 Height: 5'10"
 Weight: 170
 Blood Pressure: 116/69
 Heart Rate: 72
 Respiratory Rate: 12
 Temperature: 98.6
 Oxygen Saturation: 98%
 Glucose: 103
 Hemoglobin: 14.1
 Hematocrit: 41.4
 Hemoglobin A1c: 5.6

History of Present Illness:

S: AS ABOVE - % (1) EARACHE WITHOUT DISCHARGE X 2-3 DAYS
 (2) FEVER, EMESIS (3) DIARRHEA, SHALING CHILLS
 NO RECENT SWIMMING OR WATER IN EARS
 NO FOREIGN OBJECTS INTO EARS

O: AFEBRILE - NON TOXIC APPEARING - NAD
 HEENT - (1) TM RED WITHOUT PERFORATION, NO DISCH. AT CANAL
 NO EDEMA/ERYTHEMA OF PINNA (2) MASTOID TENDERNESS
 (3) TM CLEAR, OROPHARYNX/NAPOPHARYNX CLEAR
 SUPPLE NECK WITHOUT NODES, EMITT

CHEST/HEART - CLEAR, WNL
 APPEARS WELL HYDRATED
 NO RETCHES & BREATH, ALERT

Physical Exam:

HEENT: ELEVATED BLOOD PRESSURE
 LEFT OTITIS MEDIA, ACUTE
 HYPERGLOMERULIA

Medications:

2-1-1-0-0
 4/3/BB
 NATURAL
 SK-1 DIABINESE, 250 mg
 SK-2
 ERYTHROMYCIN-ES, 400 mg, Q.I.D. *40

Diagnosis:

MALE D.M. APPT.

3.17 STEP 9: Select and View a Scanned Document (4 of 5)

Click on the “Fit Image to Width of window”  button.

The Document Image window will look like this:

Document Image -- Demo Patient

OPC 90 - 11/05 Encounter Form

S: AS ABOVE - % ① EARACHE WITHOUT DISCHARGE X 2-3 DAYS
① FEVER, EMESIS ② DIARRHEA, SHAKING CHILLS
NO RECENT SWIMMING OR WATER IN EARS
NO FOREIGN OBJECTS INTO EARS

O: AFEBRILE - NON TOXIC APPEARING - NAD
HEENT - ① TM RED WITHOUT PERF, NO DISCH. AT CANAL
NO EDEMA/ERYTHEMA OF PINNA, ① MASTOID NONTENDER
② TM CLEAR, OROMUCOSA/NASOMUCOSA CLEAR
SUPPLE NECK WITHOUT NODES, BILAT.

CHEST/HEART - CLEAR, WNL

APPEARS WELL HYDRATED
NO KETONES @ BREATH, ALERT

OTHER TESTS:
PAPUA UNITS
CHECKED


PROBLEM LIST		PURPOSE OF VISIT	(PRINT ONLY IN THIS SECTION)
A-M-C	#		
		ELEVATED BLOOD PRESSURE	
		LEFT OTITIS MEDIA, ACUTE	
		HYPERGLYCEMIA	

REPRODUCTIVE FACTORS	G 2 P 1	LC 1	SA 0	IA 0	IMP 4/3/88	TP METHOD	NATURAL TECHNIQUES	DATE BEGLN
TREATMENT PLAN	STORE PLAN FOR PROB #							5X1 DIABINESE, 250 mg.
STORE PLAN FOR PROB #								REMOVE PLAN #
							5X4 5X2	

MEDICATIONS-TREATMENTS-PROCEDURES-PATIENT EDUCATION

✓	DISPOSE	INITIALS
	HEED	
✓	HA	THL
	HEAD	
✓	PD	THL
	RENO	
	EXERCISE	
	TWIGGLE	
	CLIMATE	
	STOCK	
	CUSTOM	
	SEB	
	TRC	
	TRNT	
	SWEARS	
	PRELIM	
	STEWAGE	
	HEAL	
	CHRYST	
	ENG	
	SAMR	
	SCHEM	
	HEMISAP	
	THESAP	
	SPUNT	
	CONCANT	
	TACON	
	ENYR	
	EMPT	

3.18 STEP 9: Select and View a Scanned Document (5 of 5)

1. Click on the “Pan Image with Mouse”  button.
2. Position the cursor in the middle of this window.
3. Click and hold down the left mouse button. The cursor will appear as a “hand”.

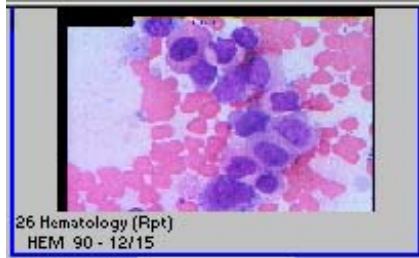
When the cursor (“hand”) is moved up and down the middle of the window, the document will move upwards and downwards. Using this technique, you will be able to view all portions of the document image.

4. Close the Document Image Window by clicking on the “X” in the top right hand corner.

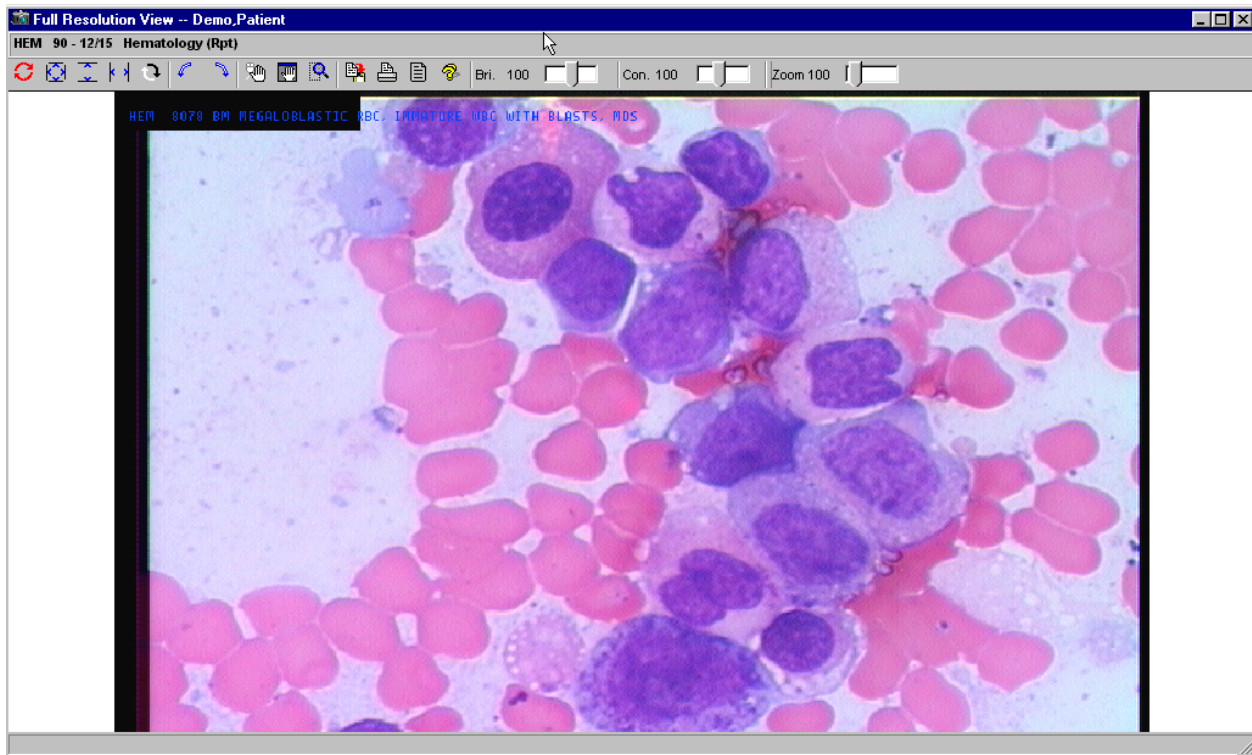
3.19 STEP 10: Select and View a Color Image

(Obtain & examine the full size color image)

Click on the pathology image (number 27) in the Abstract Viewer Window.



The Full Resolution View Window looks like this:



This window can be Zoomed and contains buttons to manipulate the image. The image view windows also provide buttons to view the patients' reports, print images and reports, and copy the image to the Windows clipboard (to create medical presentations).

Chapter 4 Selecting a Patient

4.1 Introduction

The **VISTA** Imaging System provides a multimedia medical record view of patient's data. Users may examine the patient's longitudinal visual chart, viewing images and procedure reports.

The **VISTA** Imaging Display Window is the main window for viewing patient images. After selecting a patient, a user can view patient images by selecting an abstract or list entry in the following windows:

- Abstract
- Image Listing
- Image Group
- Radiology Exam
- Muse EKG Tests
- Document listing
- Progress Notes
- Consults
- Discharge Summaries

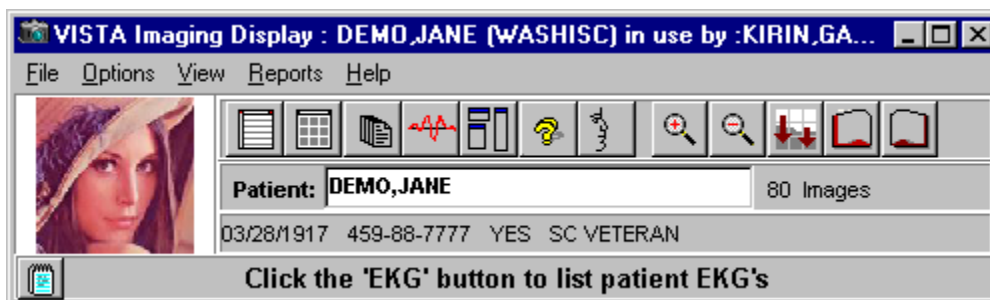
A user may choose which windows to automatically open when starting the **VISTA** Imaging System. These 'View' Preferences, can be saved allowing the user to logon with this setup on any workstation at the facility. The size and position of all windows are also preserved.

Depending on the type of image, the Imaging System displays the image in one of five viewers:

- Radiology Display window
- Full Resolution view window
- Document Image window
- Video Player window
- Muse EKG Display

The **VISTA** Imaging System also allows Imaging and Copying an images. A Procedure Report for an Image can be viewed from any image display window. **VISTA** reports such as Health Summary, Patient Profile, and Discharge Summary can be displayed.

4.2 VISTA Imaging Display Window



Enter the patient's name or ID in the text box at the top of the main window. The patient's name may be entered in a number of ways:

- Last name, first name (or initial part of last name)

- First initial of last name and last 4 digits of social security number
- Social Security Number
- Patient Location

Note: See Section 4.3 for a description of the patient lookup window.

4.2.1 Button Descriptions



The Open Detailed Image List button opens the Image Listing window for the patient.



The Open Abstract Window button opens the Abstracts window for the patient.



The Patient Reports button opens the **VISTA** Reports window, for viewing Health Summary or Patient Profile.



The MUSE EKG Button will open the MUSE EKG Display window and list all tracings on file in the Marquette MUSE Database for the selected patient. This requires **VISTA** Imaging / Marquette interface which is optional.



The 'View' Preferences button opens the 'View' Preference window for Imaging 2.5.



The Patient Selection button sets the input focus to the Patient edit field.



The Winhelp button launches the Winhelp topic for this window.

The following buttons are on the Abstracts Toolbar, which can be displayed/hidden by checking or unchecking the “Toolbar- Abstracts” options on the 'Options' menu option.



The Increase Abstract Size button increases the size of the abstracts in the Abstracts Window.



The Decrease Abstract Size button decreases the size of the abstracts in the Abstracts Window.



The Refresh button reloads the abstracts from the Imaging Network Servers. Use this button when your window does not display the abstracts properly, or when an Imaging Server that wasn't available, or reachable, has been fixed.



The Previous Page button shows the previous page of abstracts on the Abstracts window. Use this button when the abstracts are too big for all of them to display in the window at once.

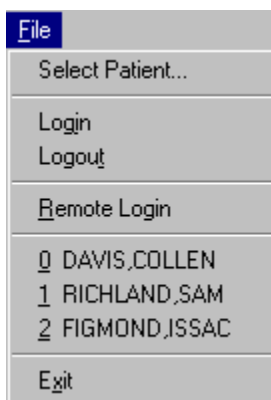


The Next Page button shows the next page of abstracts on the Abstracts window. Use this button when the abstracts are too big for all of them to display in the window at once.

4.2.2 Menu and Option Descriptions



Note: The 'Window' and 'Controls' options are only visible if 'Option | Multiple Document Interface' has been checked.



- 'Select Patient' opens the Patient Lookup window for selecting a patient.
- "Login" option will open the VISTA Sign-on window. Access and Verify codes are required to connect to VISTA.

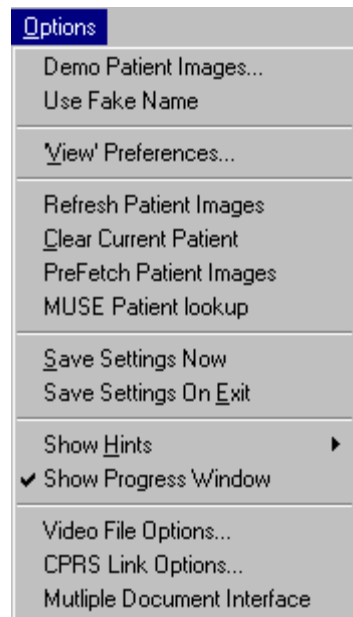
Note: If a connection to VISTA exists, a confirmation to disconnect will be necessary before connecting to another VISTA System.

- "Logout" option will disconnect the VISTA Imaging System from VISTA.
- "Remote Login" will open the VISTA Server list. Remote VISTA sites can be selected from this list.

Note: The VISTA Server list can be opened when VISTA Imaging System starts. Contact the System Manager to modify the Workstation configuration settings.

- **0...9** entries are the last 10 patients accessed during this session.
- **"Exit"** will disconnect the Imaging System from **VISTA** and close **VISTA** Imaging System.

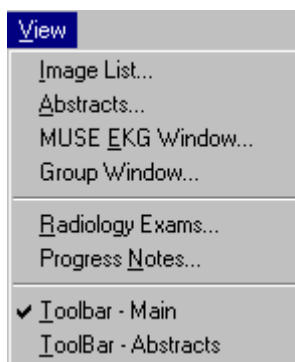
The **'Options'** option contains various functions to assist in displaying patient images.



- **"Demo Patient Images"** option displays a set of sample images, reports, EKG Tracings and documents for a sample patient. The Demo option has all of the functions of the **VISTA** Imaging System without consulting actual patient data. It is ideal for training new users.
- **"Use Fake Name"** option must be enabled by the System Manager using the Imaging Workstation configuration utility window. After this option is checked, the fake patient name will replace the real patient name on all windows, and report text. This option should be used for demonstrations.
- **"View' Preferences"** option opens the View Preferences window.
- **"Refresh Patient Images"** updates the patient's image list with most recent images.
- **"Clear Current Patient"** will close all image and report windows and clear Patient information from the Main Display window.
- **"PreFetch Patient Images"** places all images for the current patient in a queue to be copied from the Jukebox to the Magnetic Image server for faster loading of images. User must have the proper Security Key to enable this option.
- **"MUSE Patient look up"** opens a patient look up window into the Marquette MUSE Database. This is NOT a look up into **VISTA**.
- **"Save Settings Now"** saves the current settings to **VISTA**.

- **"Save Settings On Exit"** automatically save settings when **VISTA** Imaging is closed if checked.
- **"Show Hints"** option causes short hints to be displayed when the cursor is positioned over a control in any of the Imaging Capture windows, if the option is checked.
- **"Show Progress Window"** option, if checked, displays the 'Loading abstracts' window with a progress indicator when images are being loaded into the Abstract or Group Abstracts windows. Clicking the 'Cancel' button will stop the loading of abstracts after the current abstract is loaded.
- **"Video File Options"** opens the Video File Options window.
- **"CPRS Link Options"** option, if checked, gives the user the ability to break the Link to CPRS. This option is only visible if the **VISTA** Imaging System was started from the CPRS Tools menu option.
- **"Multiple Document Interface"** option allows multiple documents or color images to be viewed at one time in a number of individual Image windows contained within one main window.

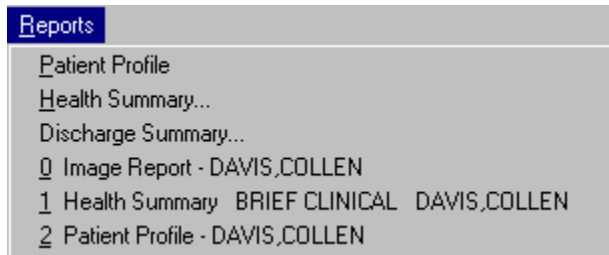
The **View** menu lists the windows that a user can select in order to view images.



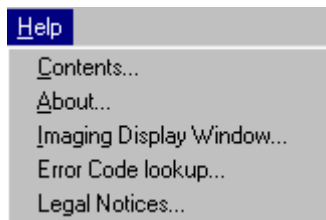
- **"Image List"** option displays the Image Listing window. All images for the patient are listed.
- **"Abstracts"** option displays the Abstracts window. Abstracts for all images are visible here.
- **"MUSE EKG window"** option displays the MUSE EKG Display window. EKG tracings for the current patient can be viewed.
- **"Group Window"** option will be enabled only if a Group window is open. Select this option to bring the group window to the forefront, and set focus to it.
- **"Radiology Exams"** option shows a listing of radiology exams for the current patient. Selecting an exam will open the report and display all associated images in the group abstracts window.

- **"Progress Notes"** option opens the TIU Documents window. Progress notes for the current patient will be listed. The progress note and associated Images can be displayed.
- **"Tool Bar"** options will Hide or Show the various tool bars on the Imaging Display tool bar.

The **Reports** menu lists various patient reports that can be accessed.



- **"Patient Profile"** option displays the **VISTA** Patient Profile in a report window.
- **"Health Summary"** option displays the **VISTA** Health Summary selection window.
- **"Discharge Summary"** opens the TIU Documents window. A list of all summaries for the patient is displayed.
- **0...n** options will be visible if there are any Report Windows open. Each number has a report type and patient name associated with it. Selecting one of these options will bring the associated report to the forefront and set focus to it.



- **"Contents"** option will display the Imaging System 'Contents' help page.
- **"About"** option displays information about the current version of the **VISTA** Imaging System.
- **"Imaging Display Window"** option displays help for this window.
- **"Error Code Lookup..."** option opens a window that enables the user to look up a description for an error, when only the error code is known.
- **"Legal Notices"** option displays copyright and FDA notice information.

4.3 Patient Lookup Window

This window appears if the patient's name or ID (entered in the *VISTA* Imaging Display Window) matches more than one patient.

The screenshot shows a window titled "Patient Lookup" with a search bar containing "smi". Below the search bar is a list of four patients. The first patient, SMITH, ADAM, is highlighted. At the bottom of the window, a status bar indicates "Found 4 entries matching 'SMI'".

Patient Name	Date of Birth	SSN	Gender	Veteran Status
SMITH, ADAM	APR 04, 1944	111111111	NO	NSC VETERAN
SMITH, CHARLES	MAR 10, 1948	107031048P	SC	VETERAN
SMITH, DONALD	MAR 03, 1954	435613243	NO	NON-VETERAN (OTHER)
SMITH, JOHN	SEP 14, 1956	111111111	YES	SC VETERAN

Select the correct entry in the Patient Lookup list then click on the 'OK' button.

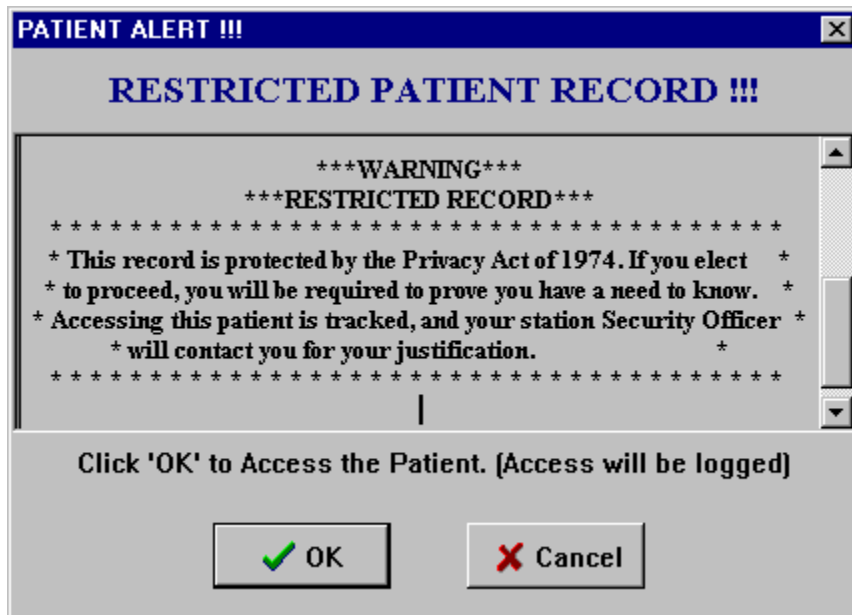
Note: The Patient Alerts window will display any Restricted Patient, Similar Patient Record or Means Test Required alerts.

4.4 Patient Alerts Window

The Patient Alerts window displays the Restricted Patient Record, Similar Patient Record and Means Test Required alerts.

4.4.1 Restricted Patient Record

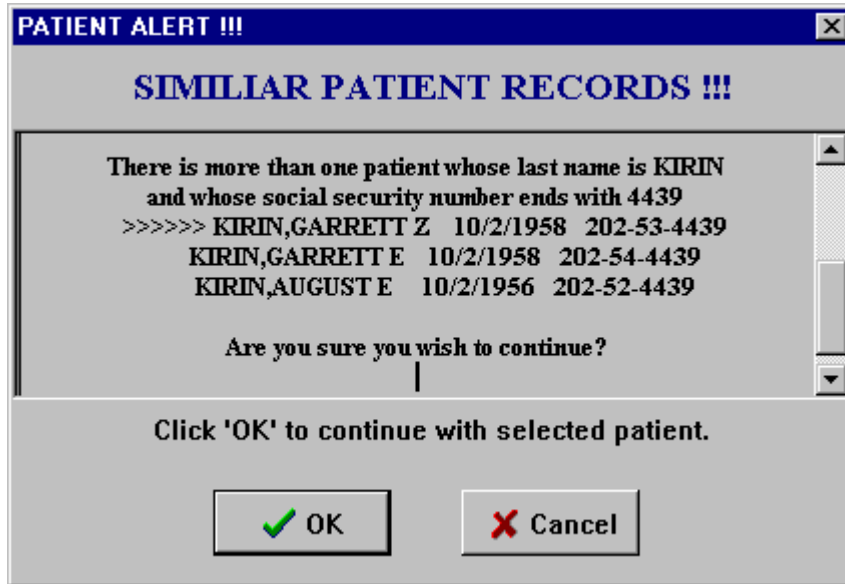
VISTA Imaging displays the Restricted Patient Record Window if a patient is selected with a record that is restricted to users who can demonstrate a need to know the information in the record.



If the 'OK' button on this window is selected, the patient lookup process will continue and the user may view the patient's images. However, the station Security Officer will contact the user and ask the user for justification for accessing this record. The VISTA Imaging System tracks requests for restricted patient records.

4.4.2 Similar Patient Records

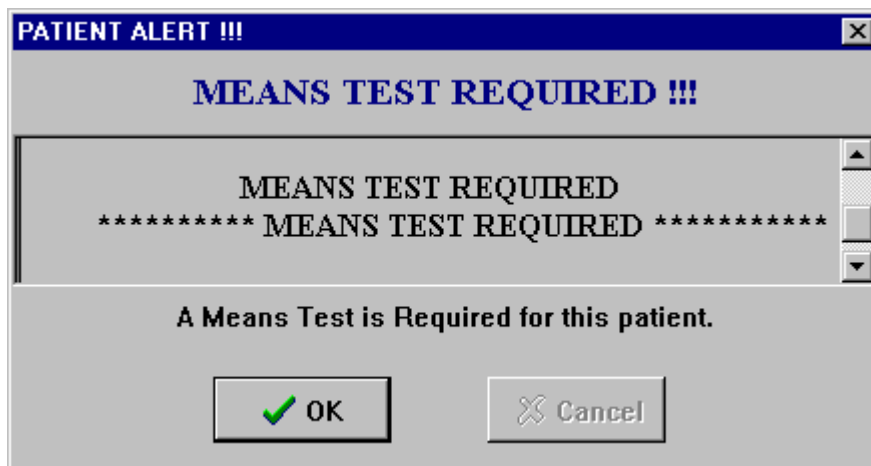
This alert will display if the Last name and Last 4 numbers of the SSN are identical to another patient in the **VISTA** System. The patient that you selected in the “Patient Lookup Window” is shown with “>>>>>>” preceding the name in the screen below.



Carefully check the full name and SSN of the patient you are searching for against the list of names and SSN's shown in this Patient Alert Window. If you are certain that the correct patient was selected click the OK button. If you wish to select another patient then click the Cancel button.

4.4.3 Means Test Required

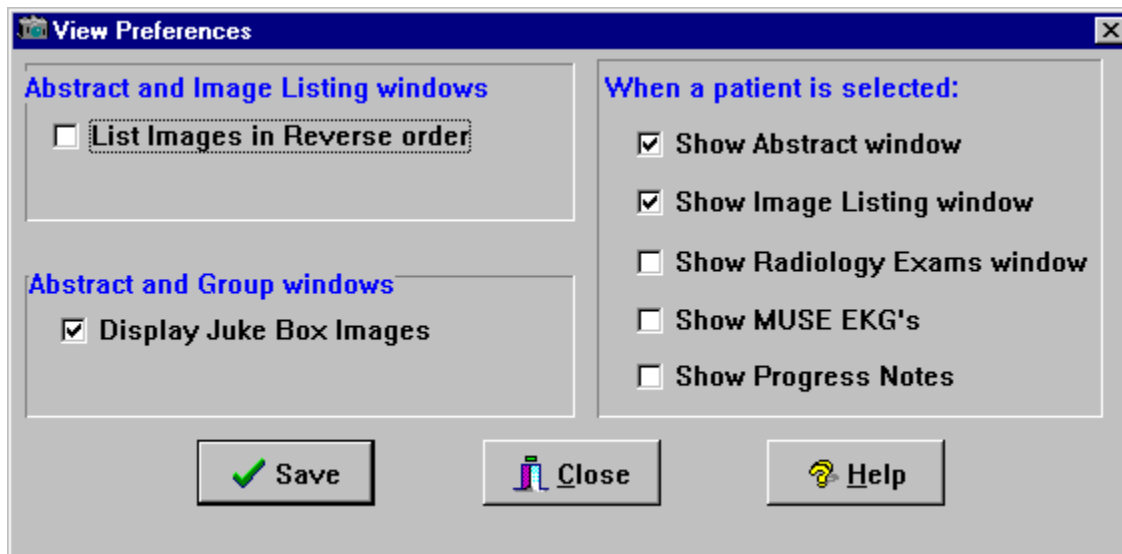
Site-specific information describing what to do when a Means Test is required will be displayed.



4.5 Setting Your ‘View’ Preferences

VISTA Imaging allows each user to decide how certain features of the Imaging system will function.

Select “View Preferences” under the Options Menu of the VISTA Imaging System Window to open this window.



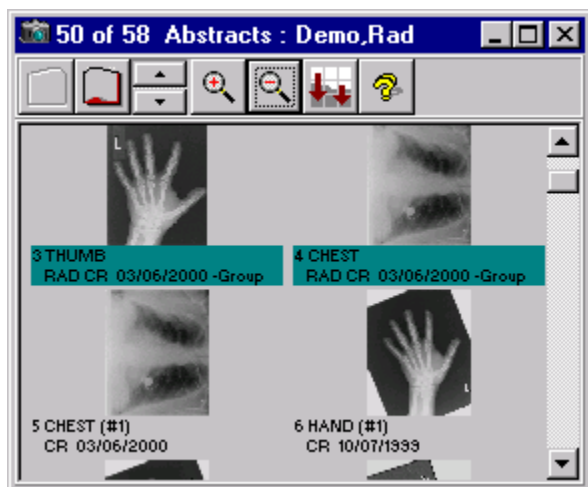
The View Preferences window has the following options:

- **'List Images in Reverse order'** dictates the Sort order of the Abstract and Image listing windows. Images will be displayed in date sequence, by default, from the past to the present. This option will cause the images to be displayed in reverse chronological order - from the present to the past.
- **'Display Juke Box Images'** dictates whether the VISTA Imaging System will display abstracts stored on the Jukebox. Abstracts stored on the Jukebox take longer to display than those stored on a magnetic drive. They also tend to be older images.
- The **'When a patient is selected'** section provides options for certain windows to be automatically opened when a patient is selected. Checking a box will cause that window to be opened automatically. If the box is unchecked, that window will not appear unless the user opens it individually.
- When the **'Save'** button is clicked the settings from this window, along with the other window settings that are user definable, will be saved as the User's View Preferences.
- Changes take effect immediately and remain in effect until the VISTA Imaging System is closed.

- Settings for each user are stored in **VISTA**. This feature enables the user to have the same settings on any imaging workstation.

Chapter 5 Selecting an Image Using the Abstracts and Image Group Windows

5.1 Selecting an Image From the Abstracts Window



Click on an abstract to see the full-resolution version of the image. If the abstract actually represents a group of images, the Image Group window will be opened.

Notes: An Image Group is represented by the image description having a green background.


- The Title of the Abstracts window displays the number of abstracts currently loaded (50 in this graphic) and the total number of abstracts for the patient (58 in this graphic).
- The blue rectangle shows the last abstract selected from this window.
- Use the Scroll bar at the right of the window to scroll among the loaded images. Use the page buttons on the Toolbar to load the next or previous page of abstracts.

5.1.1 How Many Abstracts are In a 'Page'?

The number of abstracts in a 'page' of abstracts is not a constant. The system will try to use 24 as the number of abstracts to load at one time and considers this a page. If 'Cancel' is clicked from the 'Loading Abstracts' window the number of abstracts will be less than 24. When the 'Next page' button is clicked, the system starts with the last abstract currently loaded and attempts to load 24 more. If there aren't 24, the number of abstracts in this page will be less.

The system manager can change the default number of abstracts to load from 24 to another number that is more suitable for certain individuals.

Notes:

- Pressing the Scroll button  will open the Scroll To Abstract Window.
- The blue rectangle won't necessarily indicate the Image displayed in the Full Resolution or other Image Viewer. Other images could have been loaded later into any viewer from the Image list, Radiology list, or another window.
- To display the shortcut menu, position the cursor over the window and press the right mouse button, or press <Ctrl-Tab>

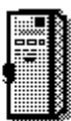
5.1.2 Generic Bitmaps used for Abstracts and Image Group Windows



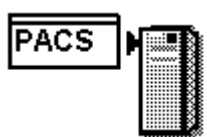
Juke Box Image

If one of the abstracts is located on the Juke Box, 'Display Juke Box Images' must be checked in the View Preferences window to have the abstract displayed. Otherwise this generic bitmap will be displayed. Clicking on this icon will cause the full resolution image to be displayed in the appropriate window.

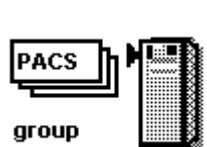
**Error
Connecting
to
Image Server**



If the **VISTA** Imaging application cannot connect to the **VISTA** Imaging Network server to retrieve images, the Error graphic will be displayed. Call the IRM Service to report this problem.



If an image from a PACS device has not been copied to the **VISTA** Imaging server, the system will display the PACS graphic.



If an image group from a PACS device has not been copied to the **VISTA** Imaging server, the system will display the PACS Group graphic.

**Error
opening
abstract.**



If an Error occurs when displaying the abstract, the Error opening abstract graphic will be displayed. Call the IRM Service to report this problem.

**FORMAT
ERROR
loading
Image File**



If the Abstract file is corrupt, or cannot be opened by **VISTA** Imaging the Format Error graphic will be displayed. Call the IRM Service to report this problem.

**Motion
Video**



If the Image file is a motion video file, the Motion Video graphic will be displayed. Clicking on this graphic will cause the motion video to be displayed in the Video Window.

**Abstract
Not Found**

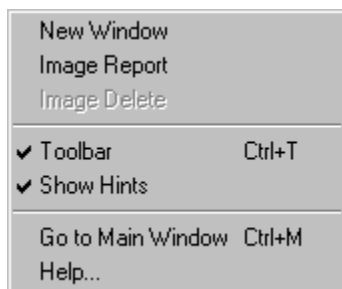
If the Abstract does not exist on the Image Server the “Abstract Not Found” graphic will be displayed. Clicking on this graphic may display the full-resolution image in the appropriate window.



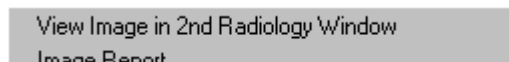
If there is a possible database integrity problem with the Image File entry, the ID mismatch graphic will be displayed. This image may require corrections, please contact the site's Imaging ADPac and/or Coordinator.

5.1.3 Short-cut Menu and Options on the Abstracts and Image Group Windows

To display the shortcut menu, position the cursor over the window and press the right mouse button or press <Ctrl-Tab>.



- **"New Window"** option will only be shown if the MDI Document Option has been selected. The current image will be displayed in a new MDI Window inside the Main Image Display window.
- **"Image Report"** option displays the Image Report window for the selected image.
- **"Image Delete"** option allows the user to delete the image from the patient record. Only users that have the proper security key will be able to delete images. When the user selects the Image Delete option, the Image Delete Confirmation window will be displayed and the user will have to confirm the deletion. All image deletions are tracked in an audit file.
- **"Show hints"** option enables or disables the showing of hints when the mouse is positioned over a control in the window.
- **"Tool Bar"** option reveals or hides the tool bar for the Abstracts window. The Abstracts tool bar can also be displayed on the **VISTA** Imaging Display window.
- **"Go To Main Window"** option returns control to the **VISTA** Imaging Display window.
- **"Help..."** Displays the On-Line Help for the Abstract Window. Pressing <F1> will also bring up the Help window.



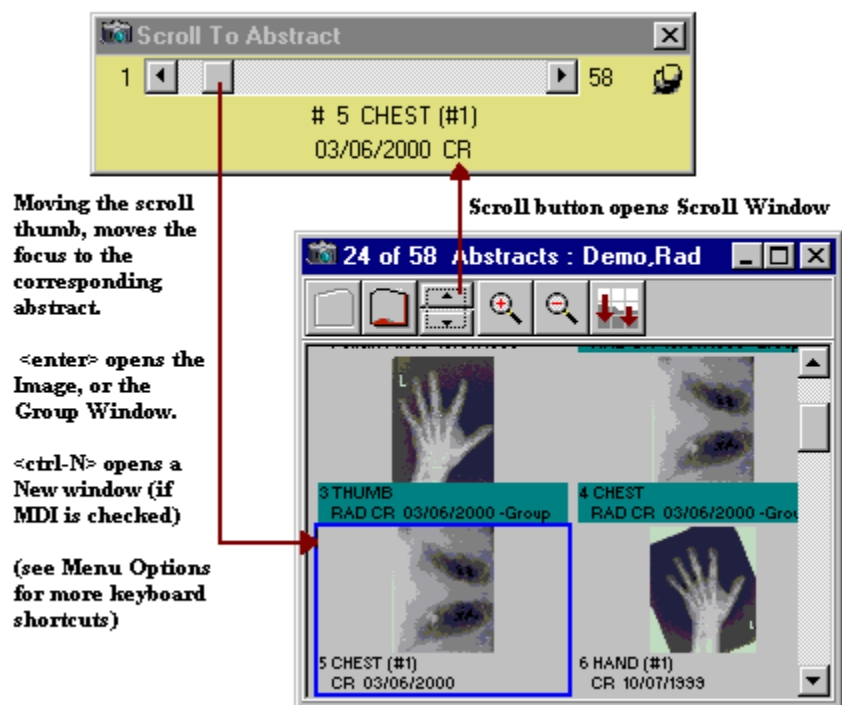
- **"View Image in 2nd Radiology Window"** This option will only be shown when the image is of type Xray, CT, MR or other radiology image

Selecting this option will display the image in the 2nd or right pane of the Radiology Viewer window. <left-Click> the mouse to display the image in the left (or only) pane of the Radiology Viewer window.

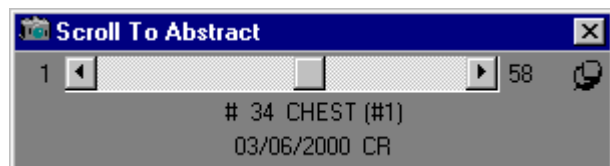
5.1.4 Scroll To Abstract or Scroll to Image Group Abstract Windows

The Scroll to Abstract and Scroll to Group Abstract windows perform the same function on the Abstracts and Group Abstracts window.

- **Abstract window** refers to Group Abstracts and Abstracts window.
- **Scroll to Abstract** refers to Scroll to Group and Scroll to Abstracts windows.



- Moving the button of the Scroll bar will move the focus to the corresponding abstract. Pressing <Enter> will open the image the same as clicking on the abstract.
- As the button is moved, the blue focus rectangle will move to the corresponding abstract.
- The Scroll window can be used as a tool to Browse patient images.





If the button is moved to an abstract that is not loaded in the abstract window, the background color of the Scroll window will change to a dark gray. Release the button and the abstract

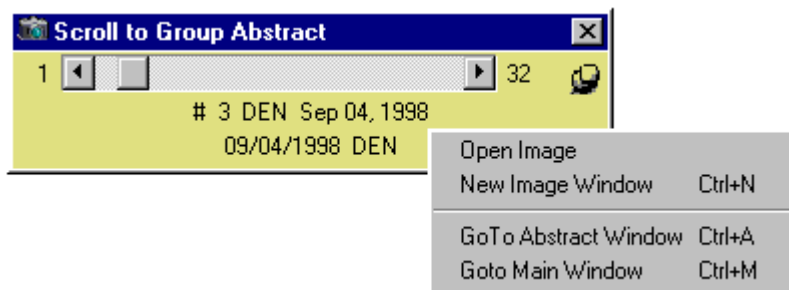
window will load a new page of abstracts starting with that abstract (#34 in the example graphic).

Click this Push Pin graphic in the upper right corner of the abstract window to toggle it between in and out.

When the scroll button is released...

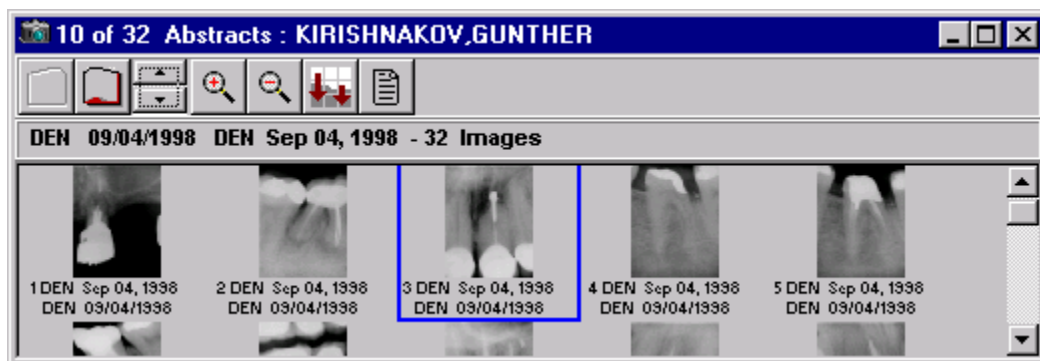
- If the Push Pin is in , the scroll window will stay open.
- If the Push Pin is out , the scroll window will close.

(Graphic of the 'Scroll to Group Abstract' window, and shortcut menu.)



5.2 Selecting an Image from the Image Group Window


The Image Group Window displays smaller versions, called abstracts, of each image in the selected study group.



Click on an abstract to see the full-resolution version of the image.

- The Title of the Image Group Window displays the number of abstracts currently loaded (10 in this graphic) and the total number of abstracts for the group (32 in this graphic).
- The blue rectangle shows the last abstract selected from this window.
- Use the Scroll bar to scroll among the loaded images. To load the next or previous page of abstracts, use the page buttons on the Toolbar.

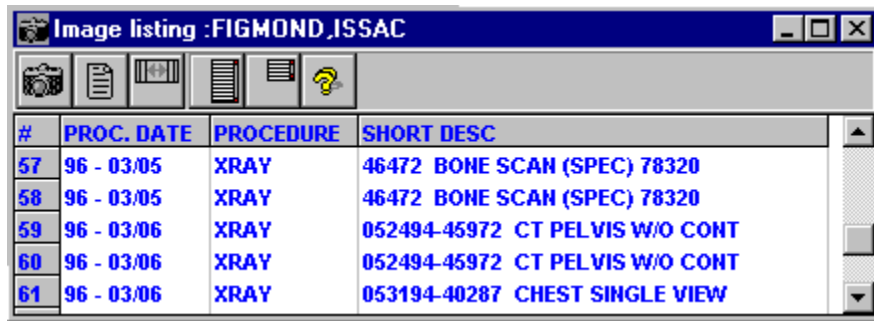
Notes:

- Pressing the Scroll button  will open the Scroll To Group Abstract Window. Scroll to a specific abstract, open images, and Browse a patient's Images are possible.
- The number of abstracts in a 'page' of abstracts is not a constant. The system defaults to using 24 as the number of abstracts to load at one time and considers this a page. If 'Cancel' is clicked while loading abstracts from the 'Loading Abstracts' window the number of abstracts will be less than 24. When the 'Next page' button is clicked, the system starts with the last abstract currently loaded and attempts to load 24 more. If there aren't 24, the number of abstracts in this page will be less. The blue rectangle won't necessarily indicate the Image displayed in the full-resolution. Images could have been loaded into any viewer from an Image list, Radiology list or other window.

To display the shortcut menu, position the cursor over the window and press the right mouse button, or press <Ctrl-Tab>.

Chapter 6 Selecting Images from Listings

6.1 Selecting an Image from the Image Listing



#	PROC. DATE	PROCEDURE	SHORT DESC
57	96 - 03/05	XRAY	46472 BONE SCAN (SPEC) 78320
58	96 - 03/05	XRAY	46472 BONE SCAN (SPEC) 78320
59	96 - 03/06	XRAY	052494-45972 CT PELVIS W/O CONT
60	96 - 03/06	XRAY	052494-45972 CT PELVIS W/O CONT
61	96 - 03/06	XRAY	053194-40287 CHEST SINGLE VIEW

The image list window contains a list of all the patient's images or image groups, showing the date, procedure and short description for each.

6.1.1 Sorting the Image List

Moving a new column to the far left results in sorting the list by that column. Select a column header with the mouse pointer and drag the column header to the left or right.

Notes:

- The widths of the columns can be changed on this window by selecting the column dividers and dragging them to the left or right.
- To display the shortcut menu, press the right mouse button or press <Ctrl-Tab>.
- See Menu Options for an explanation of using the imaging list window to Browse patient Images.

6.1.2 Image Listing Window - Menu Options

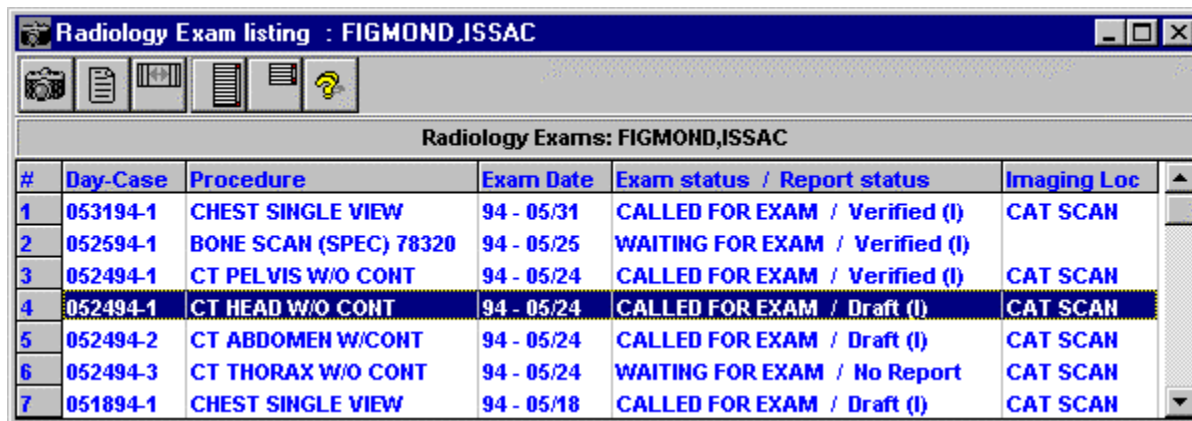
This section explains the menus and options of the shortcut menu. To display the shortcut menu, press the right mouse button or press <Ctrl-Tab>.



- **"Report"** displays the report for the highlighted image in the Image Report window.
- **"Inverse order"** reverses the order of the image entries as they are listed in the Image Listing window
- **"Relist by index"** redisplay the list by index number.
- **"Resize Columns to fit text"** sizes the columns on the window to fit the longest entry in the column.
- **"Reset Height to maximum"** sizes the window to the height of the desktop.
- **"Reset Height to default"** resets the height of the window to the default setting.
- **"Focus Remains With List"** enables the list to act as an image browser by maintaining the input focus on the list even when an Image is opened.
- **"Tool Bar."** displays or hides the tool bar.
- **"Show Hints"** turns off/on the displaying of hints when the cursor is moved over a control.
- **"Image Info"** (This option is available for System Managers only, and is mainly for debugging purposes.)
- **"Go To Main Window"** returns control to the **VISTA** Imaging System window.
- **"Stay on Top"** forces this window to stay on top of other windows in the Imaging system.

6.2 Selecting an Image from the Radiology Exam Listing

The patient's radiology exams will be listed. Select an entry from the list, then click the Image button to display the image, or the report button to display the report. <dbl-click> will open the image.



#	Day-Case	Procedure	Exam Date	Exam status / Report status	Imaging Loc
1	053194-1	CHEST SINGLE VIEW	94 - 05/31	CALLED FOR EXAM / Verified (I)	CAT SCAN
2	052594-1	BONE SCAN (SPEC) 78320	94 - 05/25	WAITING FOR EXAM / Verified (I)	CAT SCAN
3	052494-1	CT PELVIS W/O CONT	94 - 05/24	CALLED FOR EXAM / Verified (I)	CAT SCAN
4	052494-1	CT HEAD W/O CONT	94 - 05/24	CALLED FOR EXAM / Draft (I)	CAT SCAN
5	052494-2	CT ABDOMEN W/CONT	94 - 05/24	CALLED FOR EXAM / Draft (I)	CAT SCAN
6	052494-3	CT THORAX W/O CONT	94 - 05/24	WAITING FOR EXAM / No Report	CAT SCAN
7	051894-1	CHEST SINGLE VIEW	94 - 05/18	CALLED FOR EXAM / Draft (I)	CAT SCAN

Notes:

- If an exam has images associated with it, an '(I)' will be displayed after the exam status.
- The widths of the columns can be changed by selecting the column dividers and dragging them to the left or right.
- The column order can be changed by selecting a column header with the mouse pointer and dragging the column divider to the left or right.
- Moving a new column to the far left results in resorting the list by that column.
- To display the shortcut menu, press the right mouse button or press <Ctrl-Tab>.
- There are alternate ways to select an exam from the list.
- The 'Exam Status / Report status' column may display "patient mismatch" information on images that have a database integrity problem. Contact the site's Imaging ADPac and/or Imaging coordinator regarding those entries.

6.2.1 Radiology Exam Listing Window - Menu Options

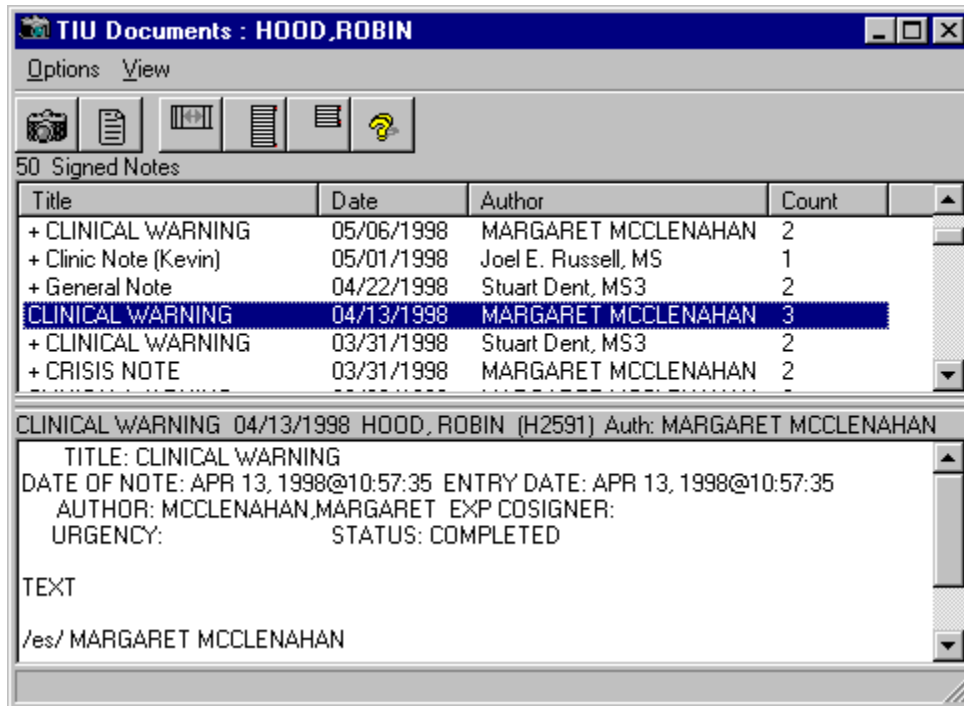
This section explains the menus and options of the shortcut menu. To display the shortcut menu, press the right mouse button or press <Ctrl-Tab>.

Report		
Inverse order		
Relist by index		
Resize Columns to fit text		
Resize Height to maximum		
Resize Height to default		
Focus remains with List		
✓ Toolbar		Ctrl+T
✓ Show Hints		
Image Info		
Go to Main Window		Ctrl+M
Stay on Top		

- **"Report"** displays the report for the highlighted image in the Image Report window.
- **"Inverse order"** reverses the order of the image entries as they are listed in the Image Listing window.
- **"Relist by index"** redisplay the list by index number.
- **"Resize Columns to fit text"** sizes the columns on the window to fit the longest entry in the column.
- **"Reset Height to maximum"** sizes the window to the height of the desktop.
- **"Reset Height to default"** resets the height of the window to the default setting.
- **"Focus Remains With List"** enables the list to act as an image browser by maintaining the input focus on the list even when an Image is opened.
- **"Tool Bar."** displays or hides the tool bar.
- **"Show Hints"** turns off/on the displaying of hints when the cursor is moved over a control.
- **"Image Info"** (This option is available for System Managers only, and is mainly for debugging purposes.)
- **"Go To Main Window"** returns control to the **VISTA** Imaging System window.
- **"Stay on Top"** forces this window to stay on top of other windows in the Imaging system.

6.3 Selecting an Image from the Documents Listing

Progress notes or Discharge Summaries can be listed in the TIU Documents window.



Notes:

- The Number of entries listed, and the type of entries will be displayed directly above the list.
- If the menu option 'Options | Preview Selection' is checked, whenever a new entry is selected, the report will display in the bottom pane of the window.

6.3.1 Sorting the Columns

Click on a column header to sort the list by that column. Click on the same column to reverse the order of the sort.

6.4 Button Descriptions – Image Listing, Radiology Exams, and Document Listing



The View Image button displays the image(s) for the selected list entry.



The View Report button displays the report for the selected list entry. The image report begins with the long description of the image, if the **VISTA** Imaging user who captured the image entered a long description. If the image selected is an image from one of the defined clinical specialties in Imaging (i.e., Radiology, Medicine, Surgery, Lab, TIU Document), the image report will also include the specialty report to which this image is assigned.



The Reset Column Width button will resize the columns in the window. The new size of each column will be wide enough to display the longest entry in the column. The columns can be sized by positioning the cursor between two of the column headings. When the cursor changes to two horizontal bars, drag the cursor left or right to resize the column. The columns can be moved by dragging the column heading left or right beyond the adjacent column. Whenever a column is moved the list will be resorted from left to right.



The Stretch Height to Maximum button increases the vertical length of the window to its maximum height.



The Reset to Starting Height button resets the vertical length of the window to the height that it was originally displayed.



The Help button will open the On-Line Help for this window.

To display the shortcut menu, press the right mouse button or press <Ctrl-Tab>.

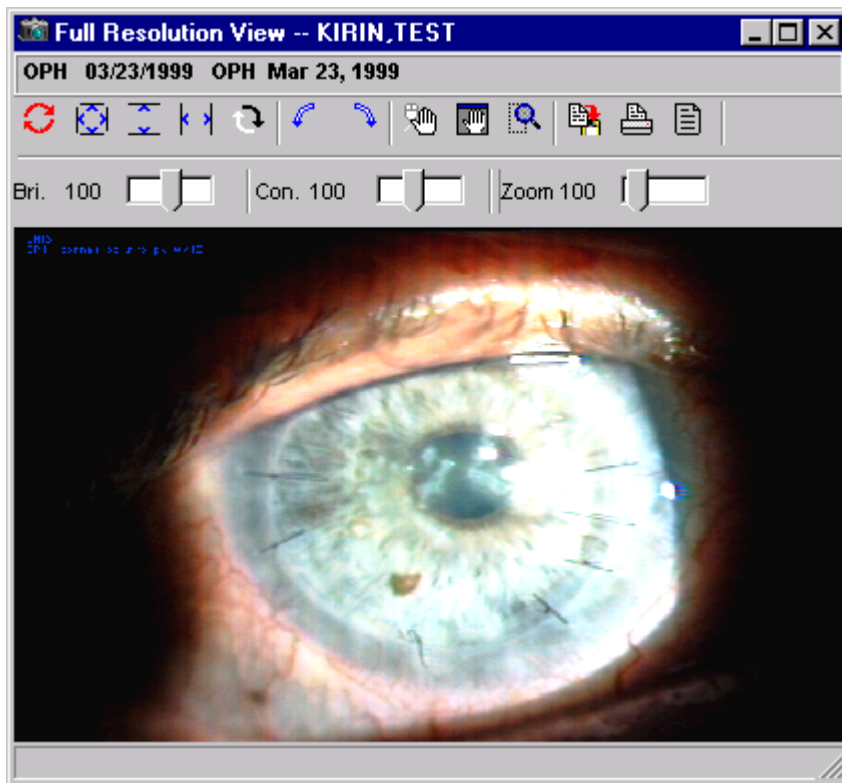
Note: The TIU Documents window does not have a shortcut menu.

Chapter 7 Viewing Medical Images

7.1 Full Resolution View Window

7.1.1 Window Description

- Full Color Images are displayed in this window. Usually, Lab, Medicine, and Surgery images are full color images:
- X-ray, MRI, CT image, or Document Images will be displayed in other viewers.



- Use the Brightness, Contrast, and Zoom sliders to adjust the brightness, contrast, and size of the image as it appears on the screen.

Note: Changing the brightness, contrast, and size of the image as displayed does not affect the actual recorded image.

7.1.2 Button Descriptions

The buttons and slider controls will manipulate the displayed image.

Note: No changes are saved; they are for viewing only.



The Slider controls for Brightness, Contrast and Zoom will increase or decrease the corresponding property of the Displayed image.



If the Image is a Multi-Page image, the paging controls will be visible.



Reset the Image will redisplay the image in the initial state, undoing all rotate, invert, contrast, zoom, etc. It does not reload the Image from the Image Server.



Fit In Window changes the Image size so that it is as large as possible and still fits in the display box.



Fit To Height changes the Image size so that it is as large as possible and still fits the height of the display box.



Fit To Width changes the Image size so that it is as large as possible and still fits the width of the display box.



Invert. Each color is replaced by its color complement. For example, white becomes black, and red becomes blue.



Rotate the Image back 90 degrees.



Rotate the Image 90 degrees.



Click Mouse Pan then use the mouse to move the image around inside the control.

Note: If the entire Image is already displayed in the display box, the Pan Image With Mouse button and Pan Window will not work, because no part of the Image is outside the visible area of the image control.



Click Pan Window and a small window displays. The whole image is displayed in the Pan Window, moving the mouse within the pan window will move the image around inside the control.



Use the Zoom In On Rectangle button to select a rectangle within the document. The **VISTA** Imaging System will enlarge the rectangle to fit in the display box of the window.



Copy the Image to the Windows clipboard.



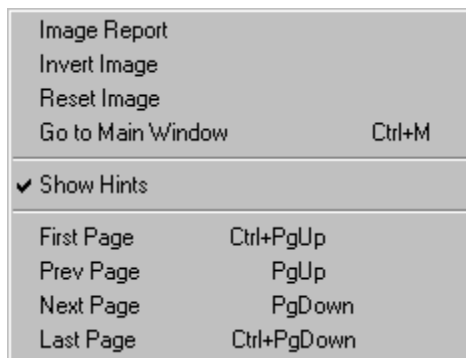
The Print button will open the Windows print dialog window where printer and printing formats can be selected.



The Image Report button will display the associated **VISTA** Report for the Image.

7.1.3 Menu and Option Descriptions

To display the shortcut menu, press the right mouse button or press <Ctrl-Tab>.



- **Image Report** opens the Report window and displays the report associated with the document.
- **Invert Image** reverses the colors in the Image.
- **Reset Image** redisplay the Image, discarding all zoom, rotate, and invert operations.
- **Goto Main Window** brings the Imaging Display main window to front of all open windows and sets input focus to it.
- **Show Hints** if checked, hints will show when the mouse is moved over a control.

The Document Image shortcut menu will have the paging options.

- **First Page, Previous Page, Next Page and Last Page** will display the corresponding page of a multi-page document.
- **Keyboard Shortcuts** are displayed to the right of the menu option. Typing the shortcut key will execute the operation without the need to open the shortcut menu.

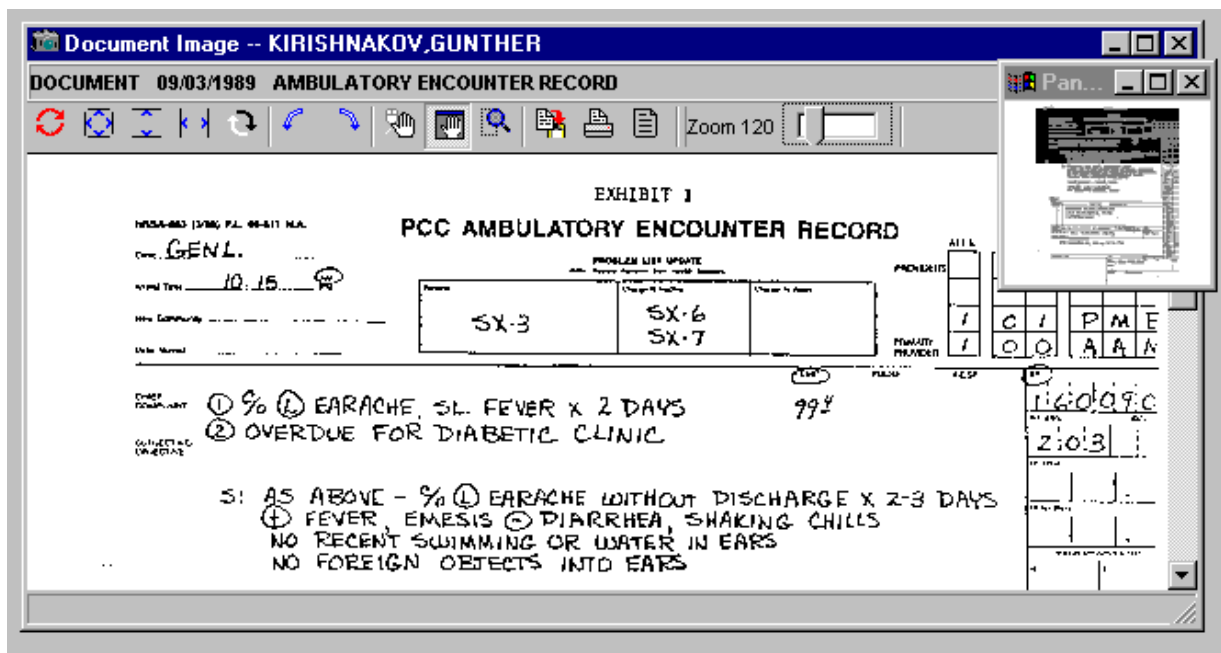
7.2 Document Image Window

7.2.1 Window Description

If the image selected from the Abstract window, Image Group window, or Image listing window is a document, the **VISTA** Imaging System will display the image in the Document Image Window.

Note: Documents may contain a drawing, text, or both.

The graphic shows the Pan Window opened, by clicking on the Pan Window button. The inverted area of the Pan Window is displayed in the Document Image window. Zooming the image will change the size of the inverted area.

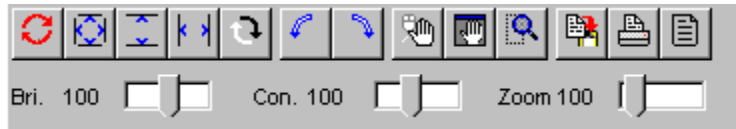


Notes:

- To display the shortcut menu, press the right mouse button or press <Ctrl-Tab>.
- Paging controls will display if the document has multiple pages.

7.2.2 Button Descriptions

The buttons and slider controls will manipulate the displayed image; no changes are saved -- they are for viewing only.



The Slider controls for Brightness, Contrast and Zoom will increase or decrease the corresponding property of the Displayed image.



If the Image is a Multi-Page image, the paging controls will be visible.



Reset the Image will redisplay the image in the initial state, undoing all rotate, invert, contrast, zoom etc. It does not reload the Image from the Image Server.



Fit In Window changes the Image size so that it is as large as possible and still fits in the display box.



Fit To Height changes the Image size so that it is as large as possible and still fits the height of the display box.



Fit To Width changes the Image size so that it is as large as possible and still fits the width of the display box.



Invert. Each color is replaced by its color complement. For example, white becomes black, and red becomes blue.



Rotate the Image 90 degrees to the left.



Rotate the Image 90 degrees to the right.



Click Mouse Pan then use the mouse to move the image around inside the control.

Note: If the entire Image is already displayed in the display box, the Pan Image With Mouse button and Pan Window will not work, because no part of the Image is outside the visible area of the image control.



Click Pan Window and a small window displays. The whole image is displayed in the Pan Window, moving the mouse within the pan window will move the image around inside the control.



Use the Zoom In On Rectangle button to select a rectangle within the document. **VISTA** Imaging will enlarge the rectangle to fit in the display box of the window.



Copy the Image to the Windows clipboard.

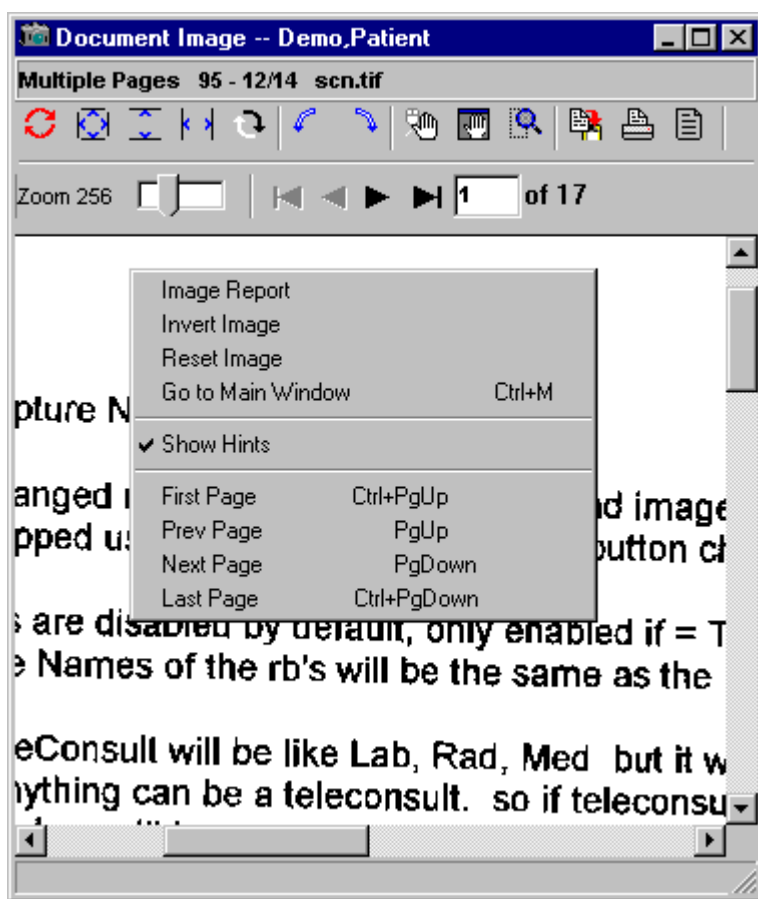


The Print button will open the Windows print dialog window where printer and printing formats can be selected.



The Image Report button will display the associated **VISTA** Report for the Image.

7.2.3 PopUp Menu



- To display the pop-up menu, press the right mouse button or press <Ctrl Tab>.
- The Image Report option will display the report associated with the document.
- The Go to Main Window option will return you to the **VISTA** Imaging System window.

7.3 Radiology Display Window

7.3.1 Window Description

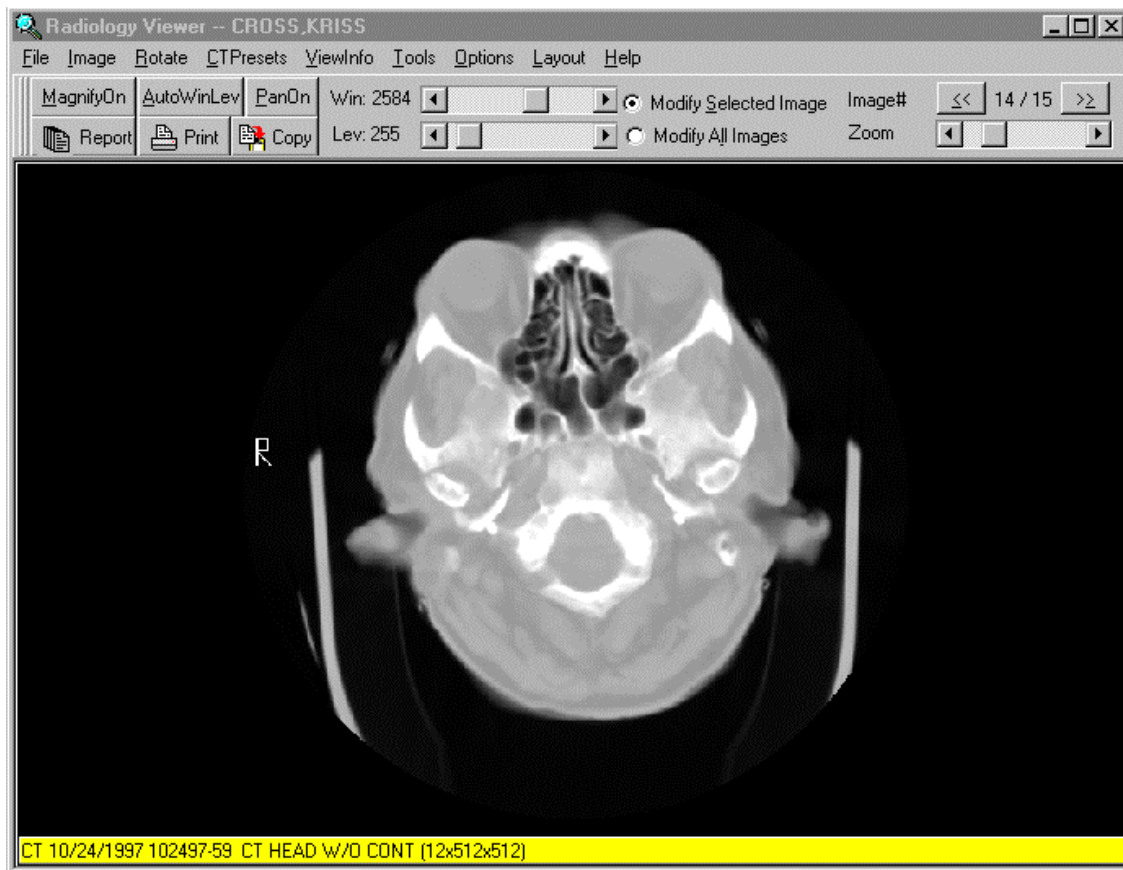
To view a radiology image or group of images, select the study from the Abstract window, image Group window, or Image listing window by clicking on it. Radiology images are generally part of a study group of images and the abstracts are normally displayed in the image Group window.

Two radiology images can be displayed at once when you...

1. Click the left mouse button on a radiology abstract image (the image will be displayed in the Radiology Viewer window).
2. Click the right mouse button on a radiology abstract image and select the shortcut menu option "Open in 2nd Radiology window".

There will be a caption below each radiology image displayed. The caption will indicate the type of study, the study description, and image information including pixel depth (8, 10, or 12 bits), image width and image height. If the image width and height have been reduced from the original image interpreted by the radiologist, the following warning will appear below the image and on the window title bar: "Reduced size, reference quality image."

When the left mouse button is pressed, the Window values will change as the mouse is dragged up-and-down, and the Level values will change as the mouse is dragged back-and-forth.

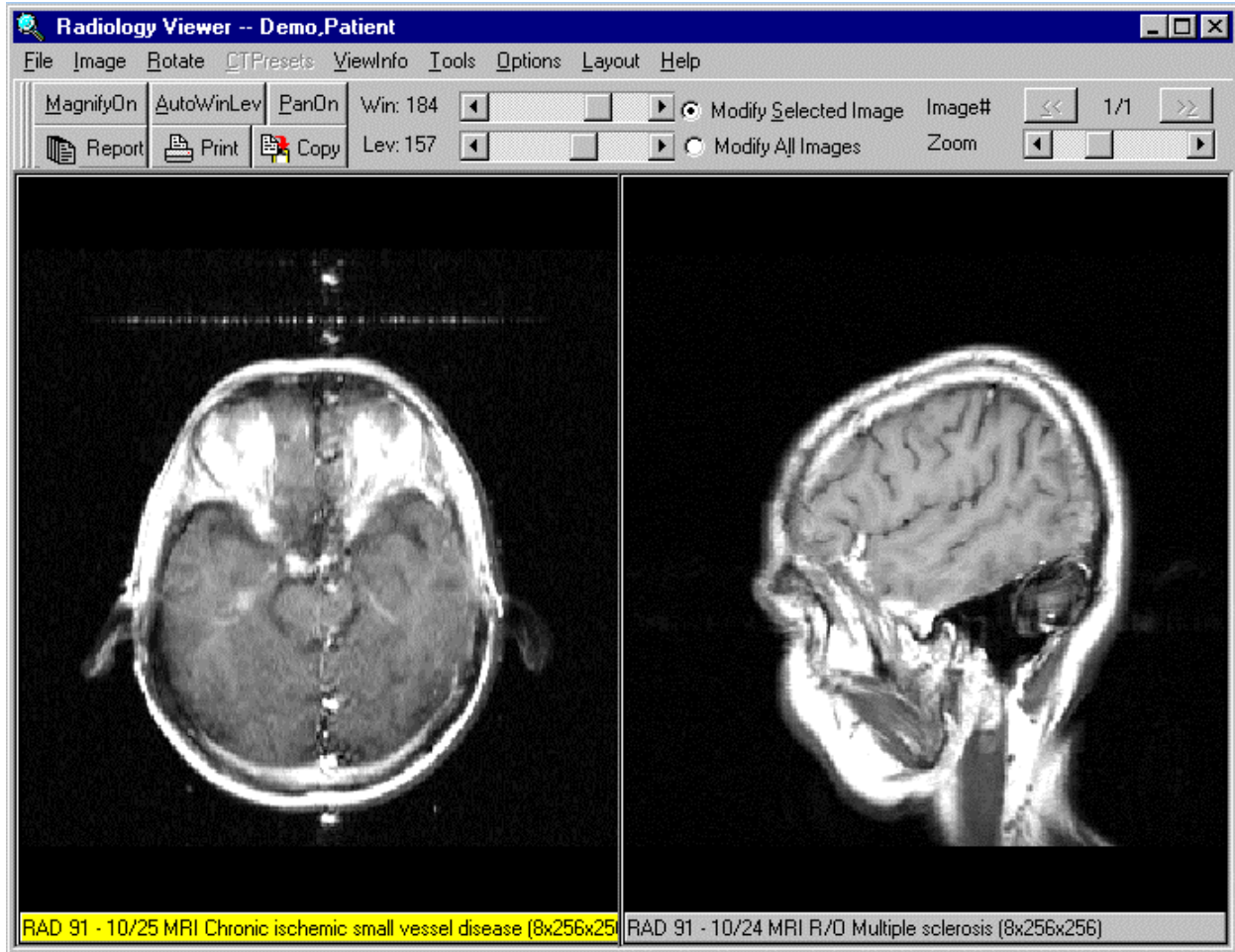


The **VISTA** Imaging System will display the size of the image at the bottom of the window. Typical radiology image sizes are as follows:

Type of Radiology Image	Image Size
Computed Radiography 8 to 10-bit	1k x 1.25k (starts with 10-bit 2k x 2.5k)
CT 12-bit	512 x 512 (40-120 images per study)
MR 12-bit	256 x 256 (80-240 images per study) or 512 x 512
Ultrasound 8-bit	512 x 512
NM 8-bit	256 x 256; 128 x 128; 64 x 64

7.3.1.1 Radiology Dual Image Display

- Two radiology images may be displayed at once.
- Only one of the radiology images can be "selected" at a time. To select an image, click on it with the mouse. An image will be automatically selected if you AutoWindowLevel it, pan it, or magnify it. The description shown below the radiology image will be yellow when it is "selected".
- Image manipulation operations (performed the toolbar or menus) can be applied to only the "selected" image or to "all" images.



This choice is controlled by clicking (on the control bar) the...

- "Modify Selected Image" radio button, or...
- "Modify All Images" radio button.

To select an image, click on the image.

7.3.1.2 Radiology Window Docking Toolbar



The docking toolbar at the top of the Radiology Display window can be separated from the Radiology Display Window and moved freely to another location on the screen.

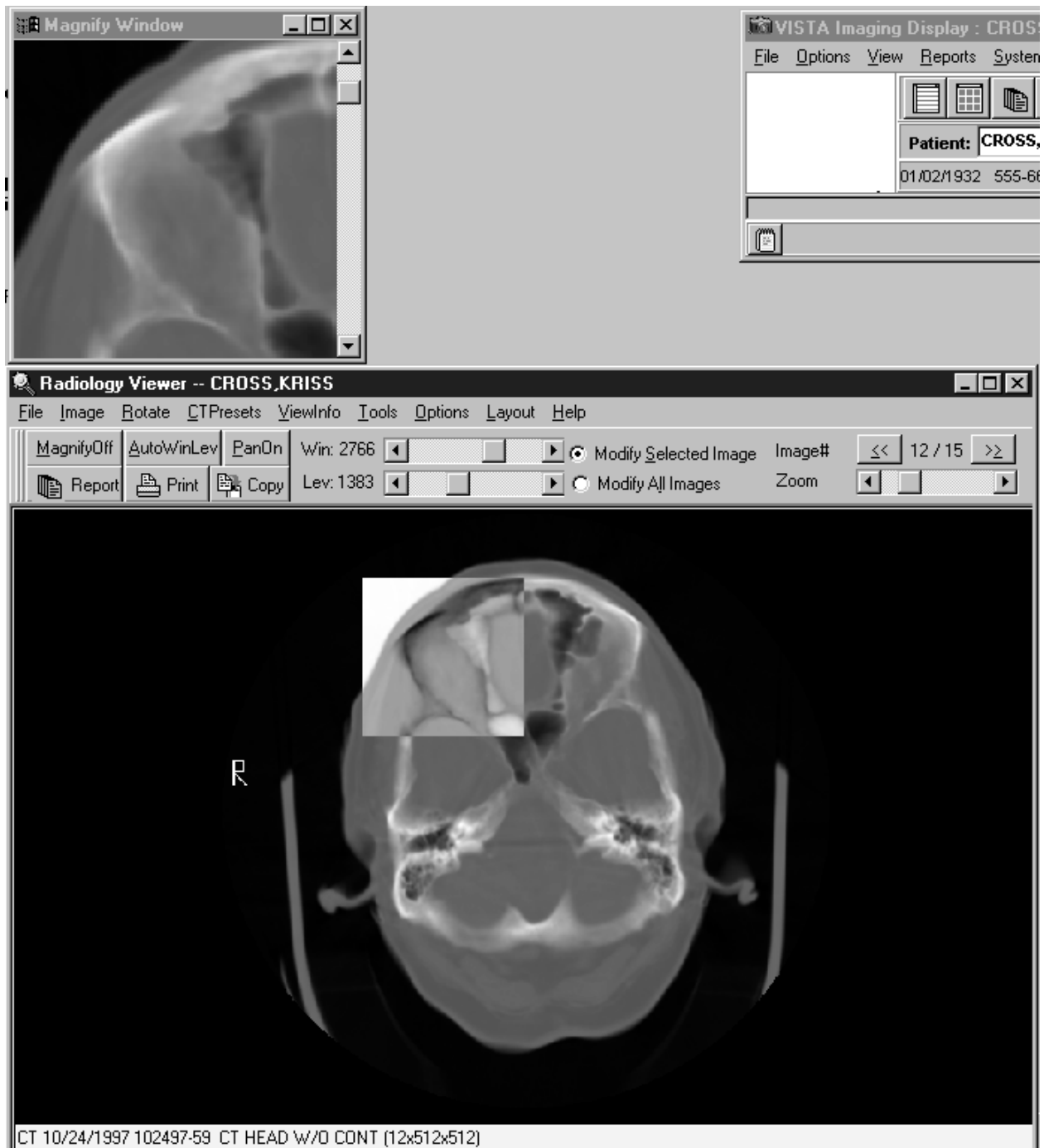


Click down on the mouse button at the double lines on the left side of the toolbar. Drag the toolbar to the desired location.

To replace the docking toolbar on the Radiology Display Window, click down on it and drag it until its top left hand corner lines up with the top left of the image display window.

7.3.1.3 Magnify Window

- Use the magnify window to zoom in on a small portion of the image. Click on the 'Magnify On' button on the toolbar. The button label will change to 'MagnifyOff' and the Magnify Window will appear.
- Use the scrollbar at the right of the magnify window to increase (down) or decrease (up) the magnification.
- Place the cursor over the area of the image to magnify. Click the mouse and a portion of the image will appear in the magnify window. It will be magnified. Move the mouse around on the image while the right button is depressed, and the area in the magnify window will change to show the image region near the cursor. The mouse button can be released before moving the mouse. Then when the mouse is clicked, the magnify window will show the image region near the cursor.
- Clicking on the MagnifyOff button will close the magnify window. The magnify window will also close when the AutoWinLev button or the PanOn button is clicked. Selecting the other image (when more than one image is displayed) will also cause the magnify window to close.



7.3.1.4 Radiology Measurement Window

- Selecting the Measure option on the Tools menu will cause the Measurement window to open, displaying the selected image. Any window/level selections will be reflected in the image in the measurement window.
- The user may choose to measure either distance or angles by selecting the appropriate button at the top of the left hand panel.

- Instructions for making measurements will be displayed in the display area below the measurement selection buttons.

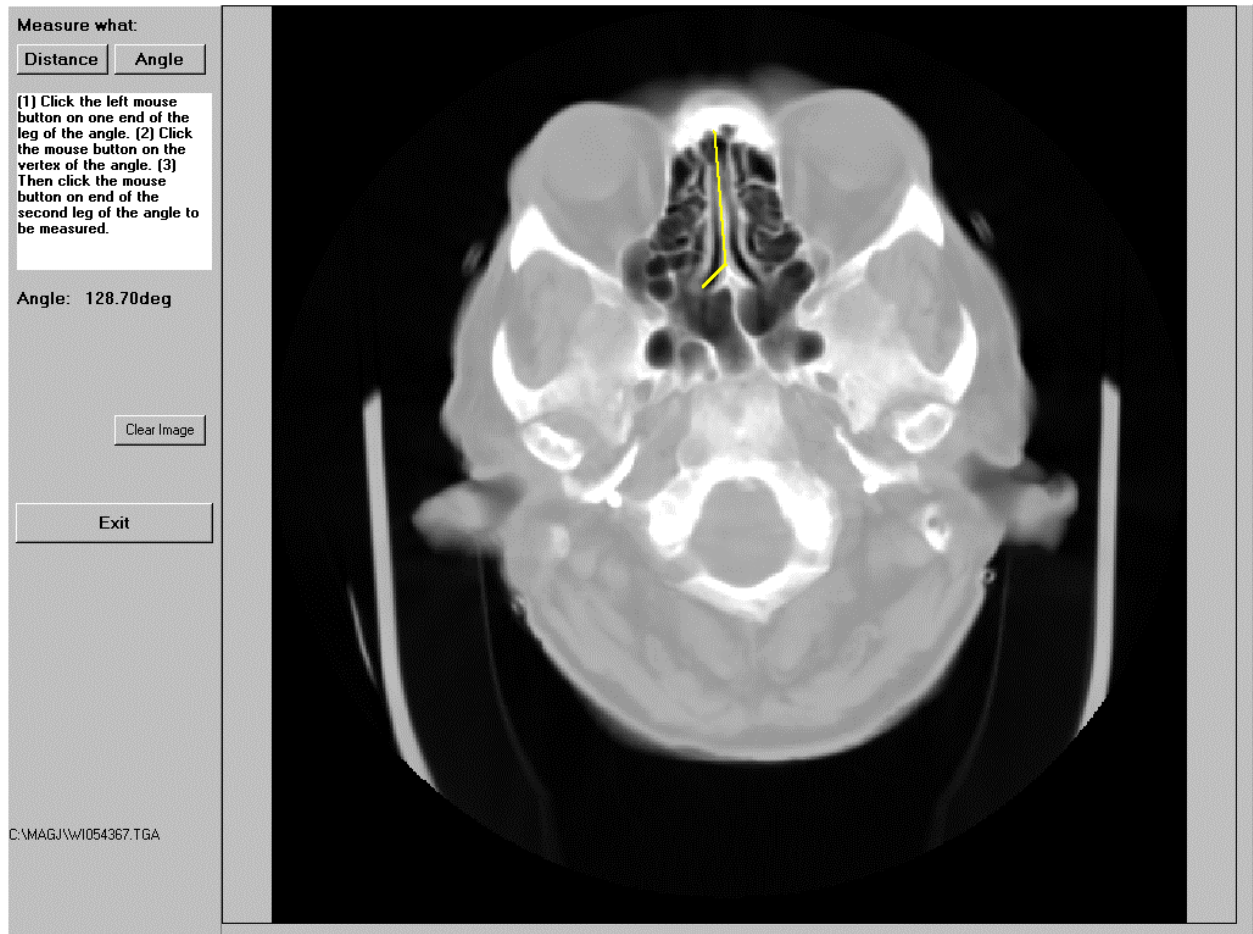
7.3.1.4.1 Measuring Distance

- If distance is selected, use the mouse to place the cursor over one end of the object to be measured. Click down with the left mouse button. Hold the left mouse button down while moving the cursor to the other end of the object to be measured. Release the mouse button. A yellow line will appear to indicate the length measurement that was made. The measurement will appear in the left hand panel below the instruction display area.
- Multiple measurements may be made; the results of each will be displayed. To clear the yellow lines from the image, select the 'Clear Image' button.
- When measurements are complete, click on the 'Exit' button.



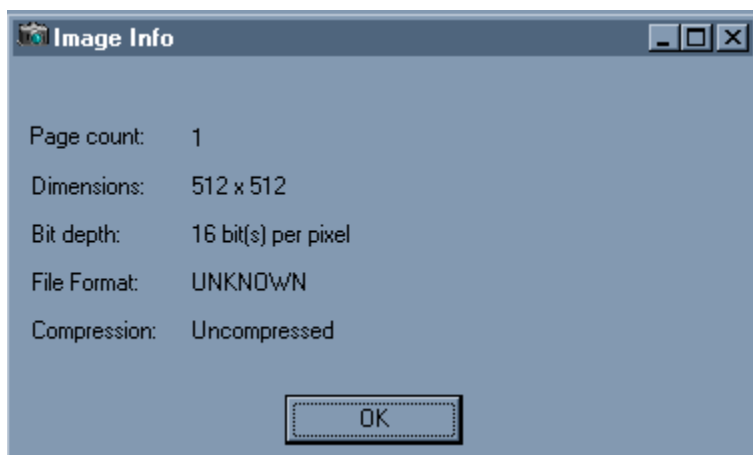
7.3.1.4.2 Measuring Angles

- If angle is selected, the user will trace the angle. Use the mouse to place the cursor over the end of one line segment of the angle to be measured. Click down and up with the left mouse button. Move the cursor to the vertex (point) of the angle to be measured. Click the left mouse button again. Place the cursor over the end of the other line segment of the angle to be measured and click the left mouse button again. A yellow line will appear to indicate the angle measurement that was made. The measurement will appear in the left hand panel below the instruction display area.



- Multiple measurements may be made; the results of each will be displayed. To clear the yellow lines from the image, select the 'Clear Image' button.
- When measurements are complete, click on the 'Exit' button.

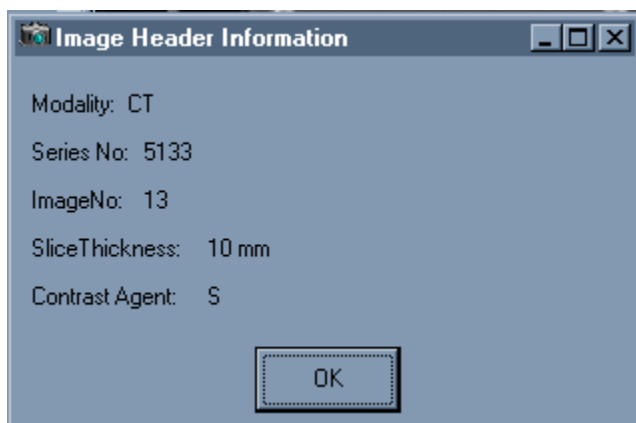
7.3.1.5 Image Info Window



The Image Info Window can be opened by clicking on the ViewInfo menu and selecting the Image Info option. The following information will be displayed about the selected image:

- **Page count:** number of pages in the image. This will normally be one, except for multi-frame images such as nuclear medicine, ultrasound, or angiography studies.
- **Dimensions:** the width and height of the image in pixels
- **Bit depth:** the number of bits used to represent the image
- **File Format:** the file format used to store the image
- **Compression:** indicates the type of compression used, if any

7.3.1.6 Image Header Information



The Image Header Information window can be opened by clicking on the ViewInfo menu and selecting the Radiology Image Info option. This window displays information from the DICOM image header. The following information will be displayed about the selected image:

Modality: The DICOM instrument that acquired the image.

Series No.

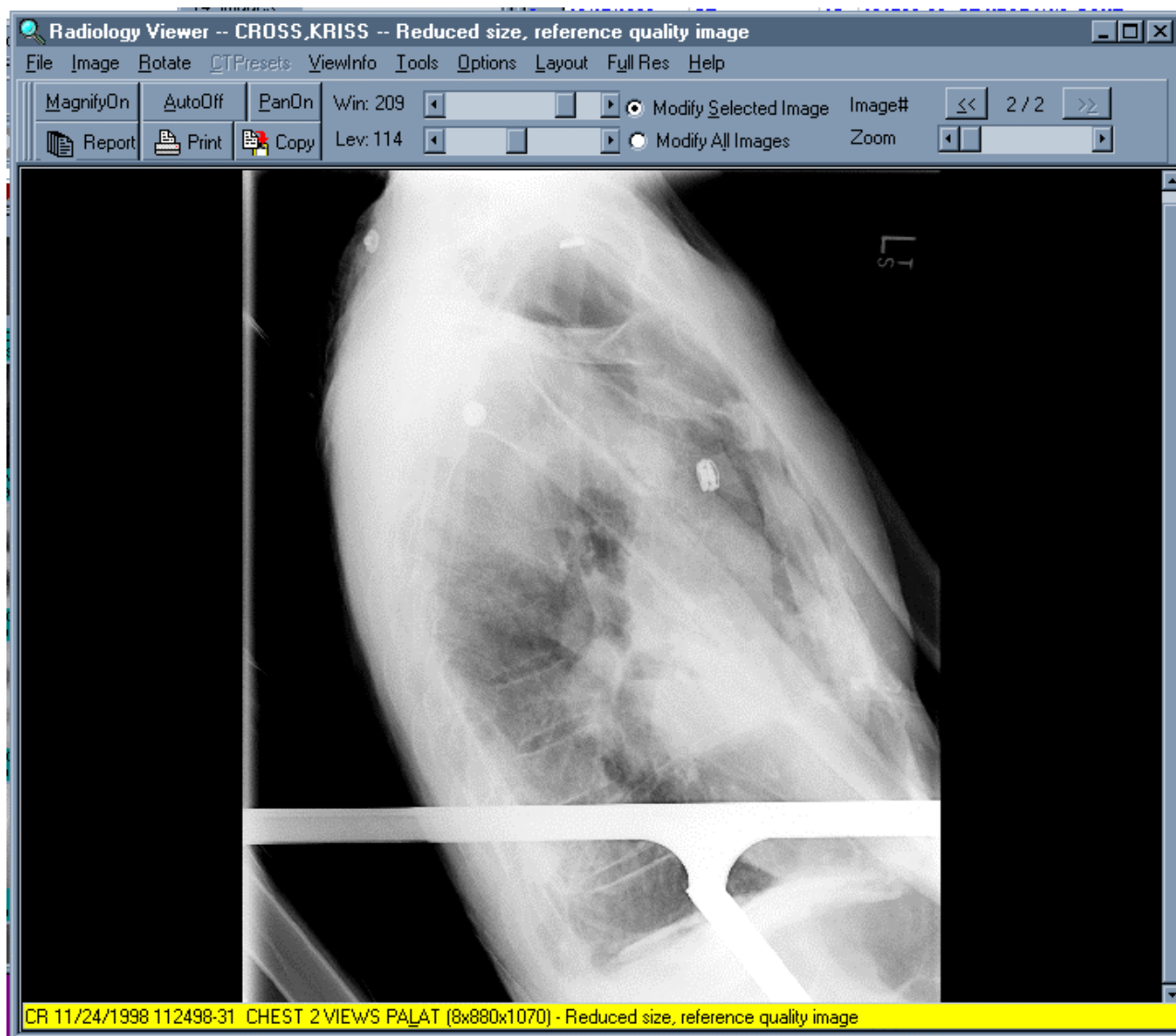
ImageNo:::

SliceThickness:

Contrast Agent:

7.3.1.7 Viewing a Full Resolution Image when a Reduced Resolution Image has been Displayed

Generally, **VISTA** Imaging provides reduced resolution digital x-rays at the clinical workstation to allow rapid display for clinical review. However, when a full diagnostic resolution x-ray image is needed, the user may click on the FullRes menu option at the top of the window. When this option is selected, the image from the selected window (with yellow caption beneath) will be redisplayed in full resolution.



In some cases, there is no full resolution available. In these cases, the user will see a message saying "No Full Resolution Image Available." This will typically happen if a commercial PACS is being used at the site. In this case, full resolution diagnostic images must be viewed on a

PACS workstation. It will also happen for CT, MR and other images that are ordinarily displayed in full resolution.

If a full resolution image has been displayed and the user pages to the next or the previous image, a full resolution image will be displayed if it is available. If it is not available, a reduced resolution image will be displayed; it will appear to be a smaller image.

When a full resolution image has been displayed, the label "Reduced size, reference quality image" will be removed from the caption below that image. If there is more than one image being displayed and another image is of reduced size, then the "Reduced size..." label will continue to appear in the window title at the top of the window. Otherwise, it will be removed from the window title.

7.3.2 Button Descriptions

Buttons on the Radiology Viewer Window are located on a Docking Tool bar at the top of the window.



When there is more than one image in a study, the **Image#:** control in the upper right corner will allow paging back and forth through images in this group. Click on the << button to page to the previous image, or the >> button to page to the next image. The new Image# will be displayed between the paging buttons.



Window/Level Scroll bars: The window and level values may be changed by moving the scroll bars. Use the mouse to drag the scroll bar to a new position.

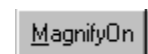


Zoom Scroll Bar: The Zoom scroll bar may be used to select a zoom factor.



Pan: To pan the image, click on the PanOn button on the tool bar. Place the mouse cursor over the image and press down on the left mouse button. Drag the mouse to move the image within the radiology window and release the mouse button when the image is in the desired position.

Note: Panning will work when the image is zoomed and scroll bars appear on the edge(s) of the image.



Click on the **MagnifyOn** button, then use the mouse to click on the image. A box will open in the upper left corner of the screen. This box will display a magnified version of the highlighted area of the image. The scroll bar at the right of the box can be used to adjust the amount of magnification. The mouse can be dragged around the image to move the highlighted area.



ROI (Region of Interest) Window/Level: This control allows adjusting the brightness and contrast of the image so that a selected region will be viewed optimally. Click on

the AutoWin/Lev button on the tool bar. (the button will now say AutoOff). Now, move the mouse to the upper right corner of the region to be selected and press the left mouse button down. Drag the mouse to the lower left corner of the region to be selected. Release the mouse button. The window and level of the entire image will be modified automatically so the selected region will use the entire gray scale range. To leave the AutoWinLev mode, click on the AutoOff button.



Rad Report: The report button may be clicked to display the short description and the **VISTA** radiology report associated with this image.



Click the **copy** button to copy the image to the Windows clipboard.

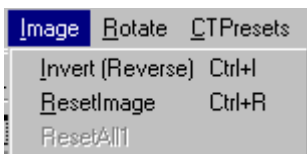


Print Radiology Image: Click on the print button to print the image to a network printer. The page header will contain the patient's name and image description.

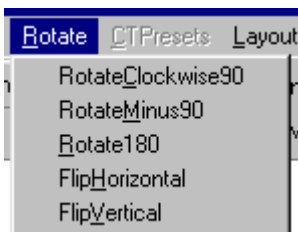
7.3.3 Menu and Option Descriptions



Use the '**File**' menu to Close the Radiology Viewer. Select '**Exit**' from the File menu to close the Radiology Viewer. '**Exit**' does not close **VISTA** Imaging; it only closes the Radiology Viewer window. The Radiology Viewer window will automatically reopen when another radiology image is selected for viewing.

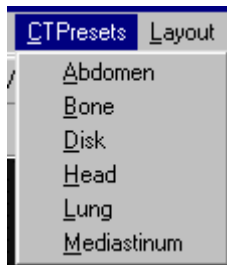


Use the '**Image**' menu to Invert the Image, that is reverse the black and white areas of the image. The image can also be Reset to return it to its original size, window/level settings, and orientation.



Use the '**Rotate Menu**' to Rotate the image clockwise 90 degrees, counterclockwise (minus 90 degrees), or 180 degrees. The image can also be flipped horizontally (side to side) or vertically (top to bottom).

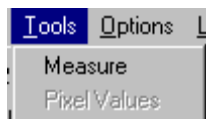
Note: A flip is different than a rotate 180 degrees.



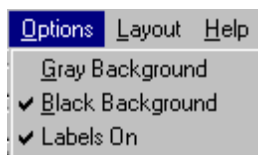
Use the '**CT Presets**' menu to control how **VISTA** Imaging displays computed tomographic (CT) images. Each choice is designed to display the indicated tissue optimally.



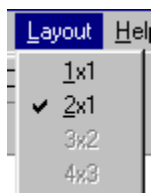
Use the '**ViewInfo**' menu to display information about the current Image. '**ImageInfo**' Displays information about the Image. The '**Radiology Image Info**' displays information from the DICOM image header.



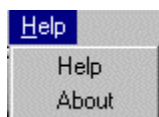
Use the '**Tools**' menu to make length and angle measurements on an image. Perform any desired window/level operations on the image before selecting this menu option.



Use the '**Options**' menu to set the color of the Radiology Window background to either gray or black, or to turn the on and off the patient position labels at the side of the image.



Use the '**Layout**' menu to configure how many images are displayed simultaneously by the **VISTA** Imaging Radiology Viewer window. "**1x1**" shows a single radiology image in the Radiology Viewer Window. "**2x2**" opens a second Radiology Viewer window. Both windows are resized to share the width of the Radiology Viewer window.



The **Help Menu** will display this window when 'Help' is clicked. When 'About' is clicked, a window displaying information about the Radiology Viewer will be displayed.

7.3.4 Radiology window Database Integrity

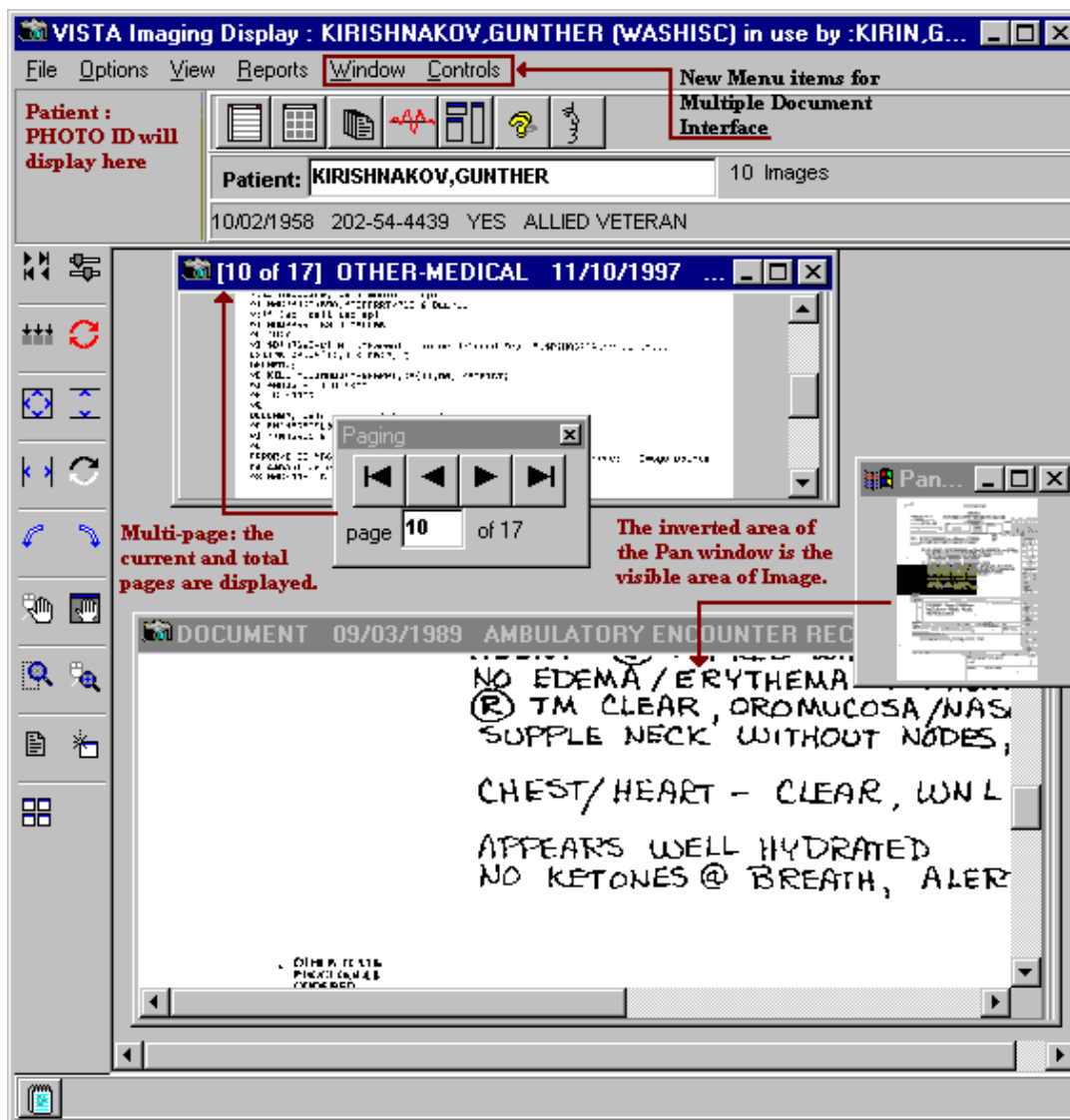
If the image selected from the Abstract window to display on the Radiology window has a possible patient mismatch, the following message will display. The check is on the patient social security number in the Image file against the information in the associated TEXT file.



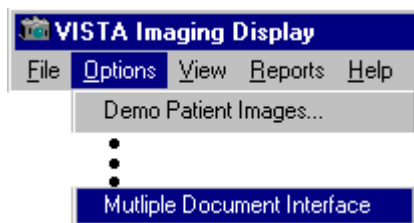
7.4 Imaging MDI Interface

7.4.1 Overview

- In VISTA Imaging, an Optional interface that enables the display of multiple Document Images at one time is available.
- Any document image (or color image) selected will be displayed in the MDI interface area in the Imaging Display main window.
- Image Function buttons will be displayed and the 'Window' and 'Controls' menu options will be visible.
- The buttons and menu options give Fit to Width, Fit to Height, Rotate, Invert, Tile, Cascade, Mouse Pan, Zoom and more functions to manipulate the Image.



7.4.2 Selecting the Multiple Document Interface

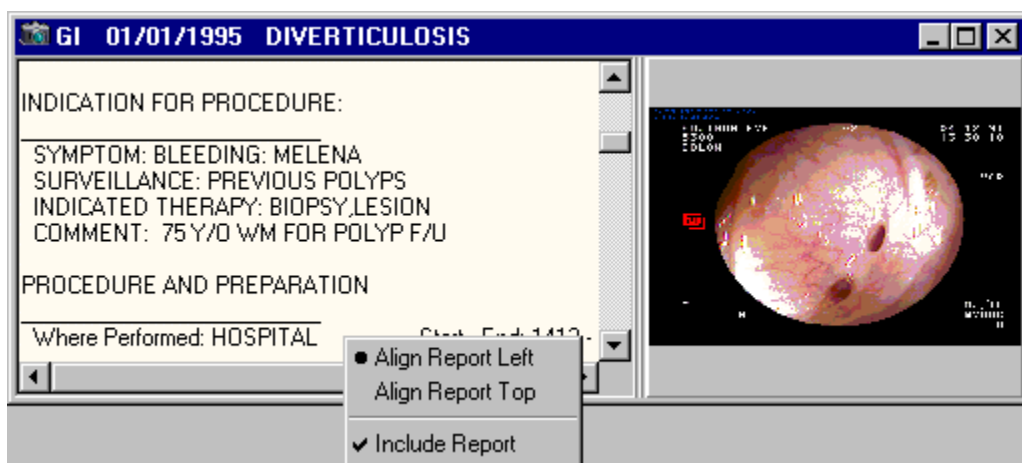


Select the Multiple Document Interface option from the Options menu.

Note: Only Documents and Color Images are handled in this interface at this time. In a future release, other types of images will be supported.

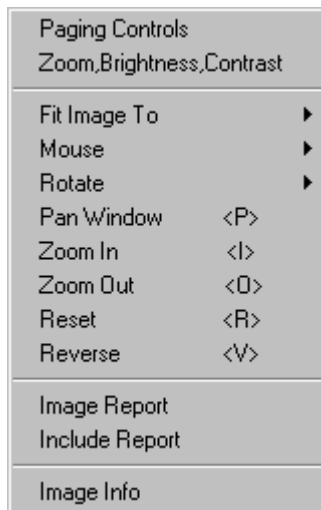
7.4.3 Menu Option Descriptions for Each MDI Image Window

- Each Image in a MDI interface has a shortcut menu. <right-click> the mouse to access the menu.



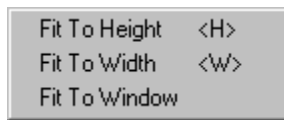
- The graphic above shows the report shortcut menu. The report can be aligned to the left or top of the image window.
- The report is not displayed if the menu option 'include report' is not checked.
- If Include report is checked, any image loaded into this Image window will have it's report displayed.

Note: <right-click> on the Image to access the Image shortcut menu. The options in the shortcut menu, apply to the current Image only, even if 'Apply to All' is selected. The Image function buttons, and the 'Controls' menu option do apply to all opened images if 'Apply to All' is selected.



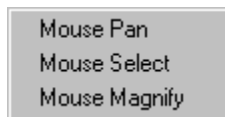
- **'Paging Controls'** opens the Paging control window for a Multi page document.
- **'Zoom,Brightness,Contrast'** opens the Slider control window.
- **'Pan Window'** displays a pan window for a zoomed image. Moving the mouse in a Pan Window moves the visible area of a Zoomed image.
- **'Zoom In'** increase the size of the Image. Less of the image will be visible.
- **'Zoom Out'** decrease the size of the Image. More of the image will be visible.
- **'Reset'** redisplay the image in it's initial state with all manipulations undone.
- **'Reverse'** inverts the image colors; black becomes white, etc.
- **'Image Report'** will open a report window for the image report.
- **'Include Report'** - Checking this option will display the associated report in the Image Window (See graphic above).
- **'Image Info'** opens a small window to display information about the Image.

Fit Image Sub Menu:



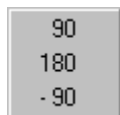
- **'Height'** - Resize the Image so that its height is fully visible.
- **'Width'** - Resize the Image so that its width is fully visible.
- **'Window'** - Resize the Image so that it is fully visible and fits in the window.

Mouse Sub Menu:



- **'Pan'** dragging the image with the mouse will move the visible area.
- **'Select'** dragging the mouse will display a selection rectangle. The area inside the rectangle will be zoomed to fill the visible area.
- **'Magnify'** the mouse will act as a magnifying glass. The center of the Magnifier is the point of the mouse cursor.

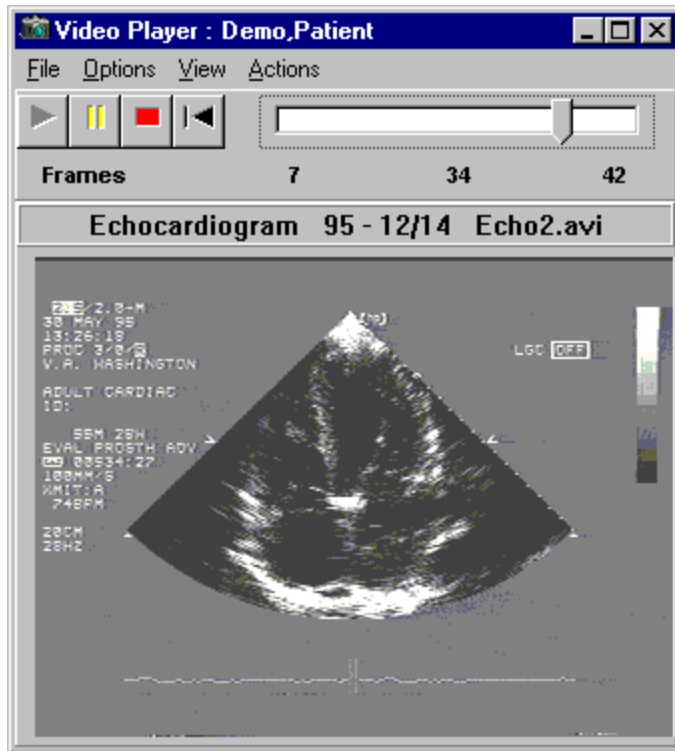
Rotate Sub Menu:



Rotate the Image **90** degrees to the right, **180** degrees to the right, or **-90** degrees back (to left).

7.5 Video Player Window

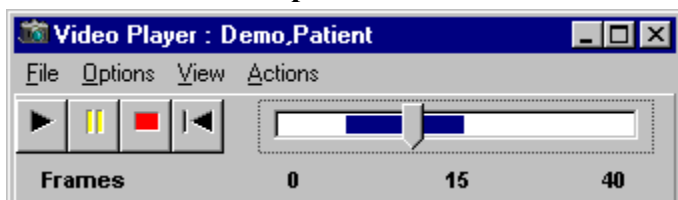
Motion video files can be saved as part of the patient record using **VISTA** Imaging (Only files of type .AVI are supported in version). When a selected patient image is a motion video clip, the Video Player window is opened.



Notes:

- Use the toolbar buttons to play, pause, stop and rewind.
- Use the slider bar to browse the video clip, frame by frame.
- "Start" and "end" points can be set.
- Select "video loop" mode to continuously play all or part of the file.

7.5.1 Button Descriptions



(left to right above)

Play, Pause, Stop, Rewind, Progress bar (slider bar)

The graphic above depicts how the window controls will be seen when the menu Option "Progress Bar" is checked, a Start Point and an End Point have been selected, and "Increment in Frames" is checked.

When the slider bar is active, the video might seem a little "choppy" or "hesitant"; this is because extra processing is needed to synchronize the slider control with the current frame of the video clip. When the "Progress bar" is unchecked, this "hesitation" will be less noticeable.



(left to right above)

Play, Pause, Stop, Fast Forward, Rewind, one Frame forward, one Frame backward

The graphic above depicts how the window controls will be seen when the menu option "Progress Bar" is not checked.

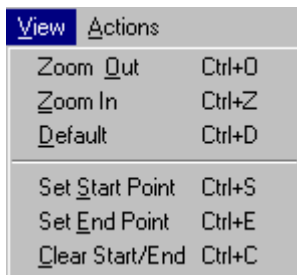
7.5.2 Menu and Option Descriptions



- "Image Report" displays the associated *VISTA* Report for this image.
- "Exit" will close the Video Player window.



- **"Show Progress bar"** will hide/show the slider bar.
- You can change the **"Increment"** of the progress indicator to frames or seconds.
- Select **"Video Loop"** for continuous play of the whole video clip, or the selected region (See Start Point and End Point to select a region).



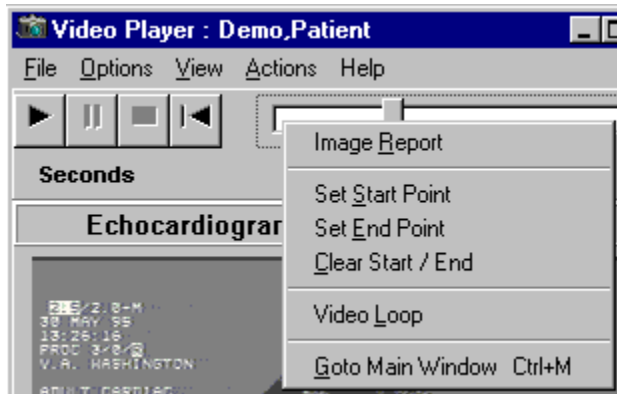
- **"Zoom Out"** will decrease the size of the window.
- **"Zoom In"** will increase the size of the window.
- **"Default"** will reset the size of the display to the default (original) –
Note: the default size is the best size for picture quality.
- **"Set Start Point"** and **"Set End Point"** at different places in the video, will select a region of the video clip. When a region is selected, only that part of the video clip will be shown, when you 'play' the video.
- **"Clear Start/End"** will clear the selected region is played.



- **"Play"** will start the video in motion from the current position of the slider bar.

- **"Stop"** will stop the video.
- **"Rewind"** to rewind the video clip to the beginning.

7.5.3 PopUp menu of the Video Player Window



Press <Ctrl - Tab> or right click using the mouse to display the PopUp menu.

- **"Image Report"** displays the associated *VISTA* Report for this image.
- **"Set Start Point"** and **"Set End Point"** at different places in the video, will select a region of the video clip. When a region is selected, only that part of the video clip will be shown, when you 'play' the video.
- **"Clear Start/End"** will clear the selected region.
- Select **"Video Loop"** for continuous play of the whole video clip or the selected region.
- **"Goto Main Window"** changes application focus to the Main Imaging Display window.

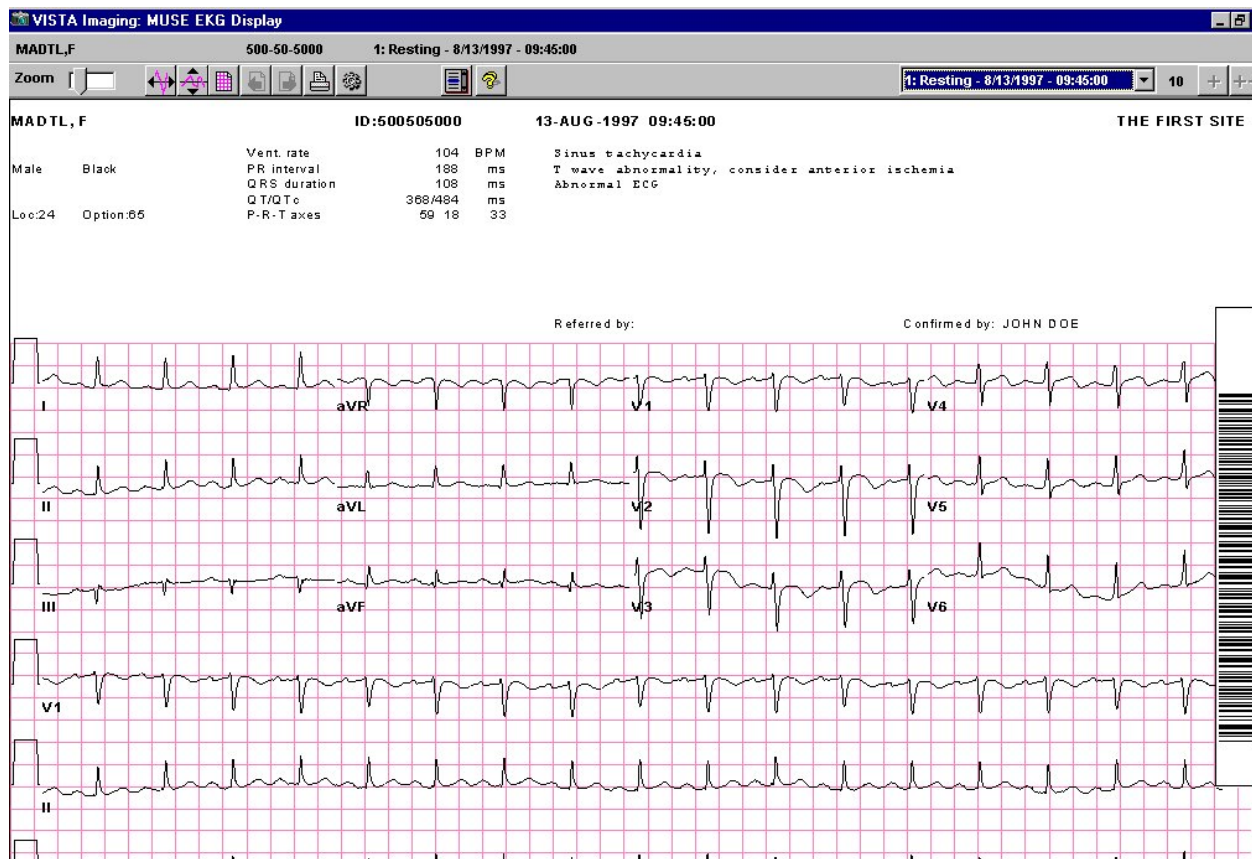
All options of the PopUp menu are also on the main menu for the Video Player window.

Chapter 8 Viewing the MUSE EKG Display

8.1 Overview

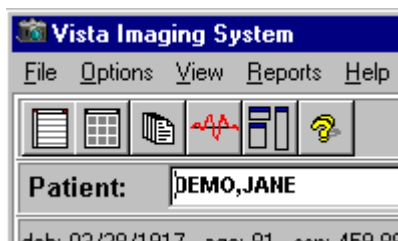
This is the main window for viewing Marquette MUSE EKGs. It is opened from the **VISTA Imaging Display** main window after selecting a patient.


- A patient can be searched for in the Marquette Database by clicking on the Muse Patient Look Up button.
- Different tests can be selected from the patient Tests drop down list or the Patient Tests Window.
- Specific pages of a multiple page test can be selected from the tests page drop down list.

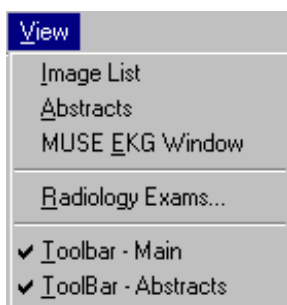


8.2 Starting the EKG Display

The **VISTA Imaging MUSE EKG** Display interface is started from the **VISTA Imaging Display** main window.



1. From the **VISTA Imaging Display** main window (above), select a patient.
2. Then, either click on the **MUSE EKG button**  on the Imaging System window tool bar....



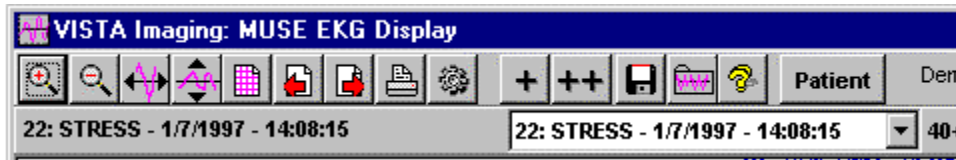
3. ...Or, select the **View | MUSE EKG window** list menu option (above) and the **VISTA Imaging MUSE EKG** Display window will be started.

8.3 Navigating the EKG Display

1. Position the cursor on any control using the mouse.
 2. '**Click the left mouse button**' to activate the control...
 3. ...Or make a selection from a list.
- Pressing the **<tab>** key will move the focus to the next control in the window's Tabbing sequence.
 - Pressing **<Enter>** will activate the control in focus, it's the same as clicking with the left mouse button.

- If a button is in **focus**, it will have a dotted rectangle or highlighted border, if an text field or list box has focus, the text will be selected.

Example: In the following graphic, the 'Zoom In' button (leftmost button) has focus.



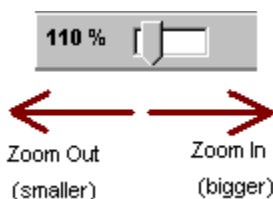
'Browsing' the Patient's EKG tests can be accomplished in **two ways**:

- Move focus to the Previous or Next Test buttons by tabbing or clicking with the mouse; then **repeatedly press <Enter>**.
- Move focus to the Patient Tests drop down list box, and press the **<down arrow>** or **<up arrow>**.

8.3.1 Zoom Buttons and Slider bar

- The **Zoom IN button** increases the size of the displayed EKG. If the new size is larger than the window, scroll bars will be displayed.
- The **Zoom OUT button** decreases the size of the displayed EKG. If the new size is smaller than the window, scroll bars will not be displayed.

Zoom the displayed EKG by moving the **Zoom Slider bar**.



Note: The Zoom size is saved as a user preference. The next time a patient's EKG's are viewed, the Zoom size will be applied to the displayed image.

8.4 In the VISTA Imaging System Main Window


When a patient is selected from the **VISTA Imaging System** main window, the **VISTA System Patient Record is being accessed..** <Click> on the MUSE EKG Button or select the MUSE EKG Display menu option, and the SSN of the currently selected **VISTA System** patient is used to do a look up into the **Marquette MUSE Database**. The **VISTA Imaging MUSE EKG Display**

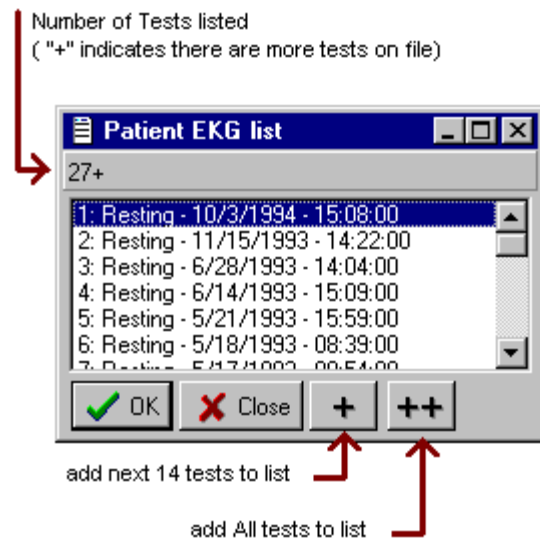
window is opened and if the SSN is found in the MUSE Database then the 14 most recent tests are listed in the patient test drop down list box on the MUSE EKG Display window.

If the SSN isn't found in the MUSE Database a message window will display a message stating that no matching SSN was found.

8.5 Patient EKG Tests Window

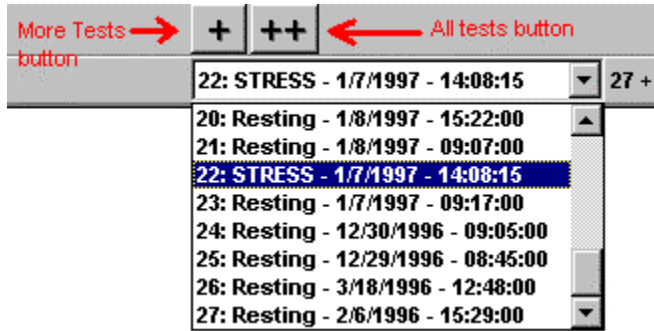
On the tool bar of the **VISTA** MUSE EKG Display window is the Patient Tests Window button.

1. <Click> the Patient Tests Window button  and the Patient Tests drop down list will be hidden and the window (shown below) will be displayed.
2. The window can be resized to see more tests. Select an item and that test will be displayed.
3. Close the window and the Patient Tests drop down list will be redisplayed.



8.6 Patient Test Drop Down list box

On the tool bar of the **VISTA** MUSE EKG Display window is the Patient Tests drop down list box that lists the 14 most recent tests on file in the MUSE EKG Database for the current patient.



The number of tests listed is displayed to the right of the drop down list box. If not all tests are listed, the count will have a plus sign (+) appended to it, to indicate more tests are available.

Notes:

- Clicking on the...
 - 'More Tests' button will add the next 14 recent test or...
 - 'All Tests' button will add all tests to the drop down list box.
- When focus is on the Patient Tests drop down list box, using the <up> and <down> 'arrow keys' will display the previous or next EKG.
- The Patient Tests window displays the same Tests list. It is simply an alternate view.

Chapter 9 Viewing Reports for a Patient

9.1 Introduction

The Imaging Display Software allows the user to view several different kinds of reports:

- medical procedure reports
- surgical operation reports
- anatomic pathology reports that include autopsy, surgical pathology, cytology, and electron microscopy reports
- radiology reports
- health summaries
- patient profiles
- progress notes
- discharge summaries

The procedure reports are displayed by clicking the report button on any of the following windows:

- Full Resolution View
- Radiology Viewer
- Group View
- Document

The health summary and patient profile reports are printed by clicking the report button on the Main Window.

Note: You may open more than one Report Window at a time.

9.2 Procedure reports

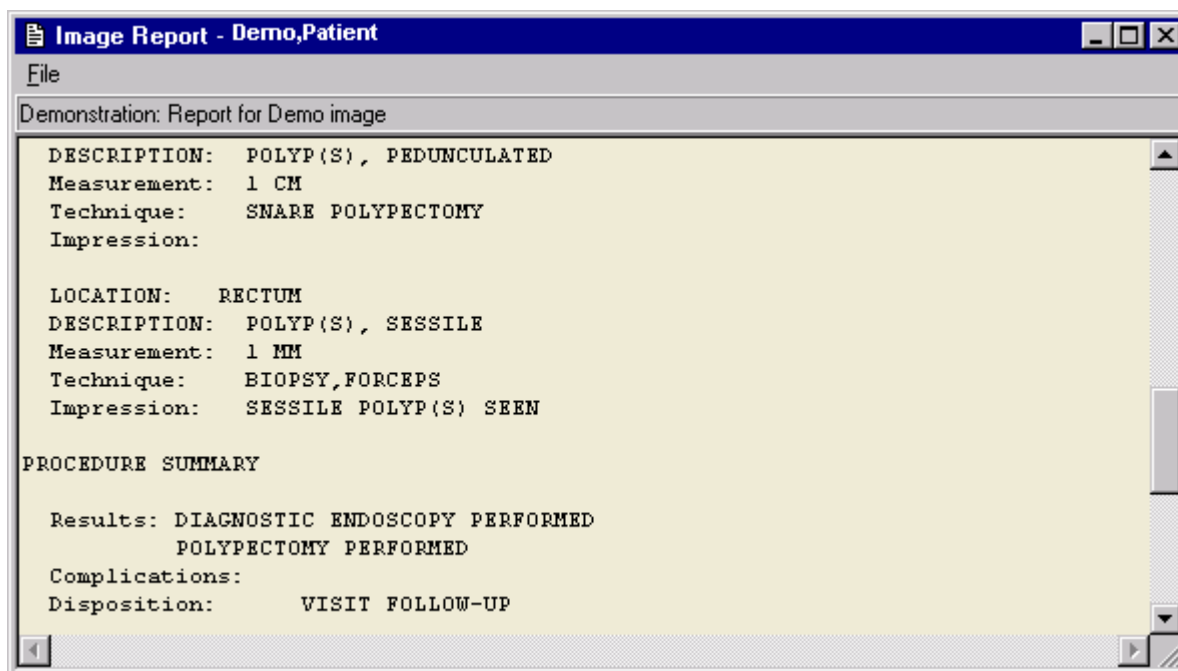
The View Report button is located on the:

- Full Resolution View Window
- Radiology Viewer Window
- Document Image Window
- Image Group Window.

Clicking on this button will cause a report to be displayed in the Image Report Window. This report will contain the...

- **Long description** for the image, if there was one entered.

- **Report** for the medicine, surgery, radiology, or laboratory procedure to which the image is associated.



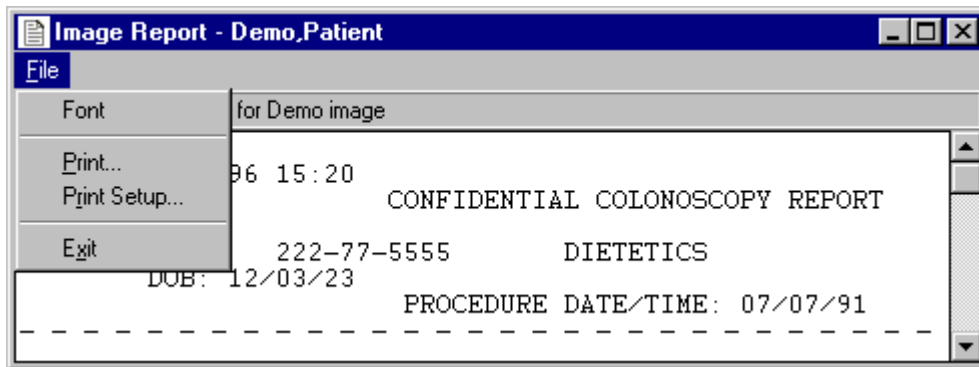
9.2.1 Other Report Functions

9.2.1.1 Copy a Report

Click the right mouse button over the text of the report and choose Select All. Click the right mouse button again and select Copy. These actions will copy the report to the Windows clipboard.

Once the report has been copied to the clipboard it can be pasted into any Windows based word processing program. Optionally, select part of a report displayed in the Report Window with the mouse, click the right mouse button, and select Copy. This will copy the selected part of the report to the Windows clipboard.

9.2.1.2 Print a Report



The menu option '**File**' has the following sub menu's:

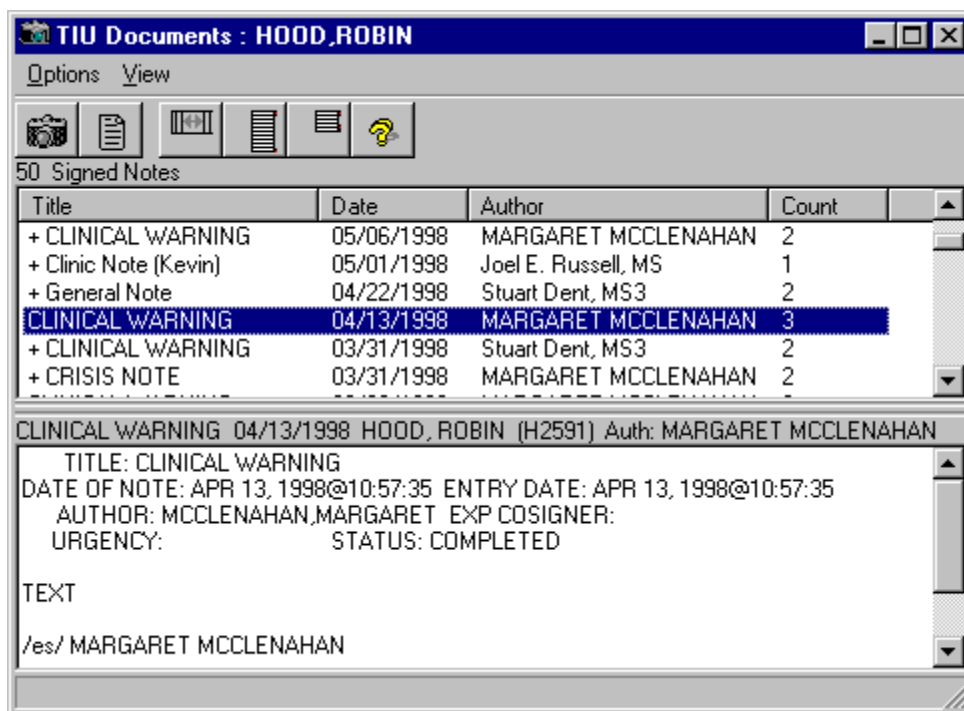
- **Print:** Click on the **Print** option to begin printing to a network or local printer.
- **Font:** Click on the Font option and the Widows Font selection dialog widow will open. The font, style, point size, effects, color and script are changeable.
- **Print Setup:** This option opens the standard Windows Print Setup window. This is not recommended for novices. Be sure to change this back to the default printer so the next user will not inadvertently print data to the wrong device.

9.3 Progress Notes and Discharge Summary Reports

Progress Notes or Discharge Summaries can be listed in the TIU Documents window.

To **display the report** for a Progress Note or Discharge Summary...

1. Click on the desired entry.
2. Click on the Display Report button.



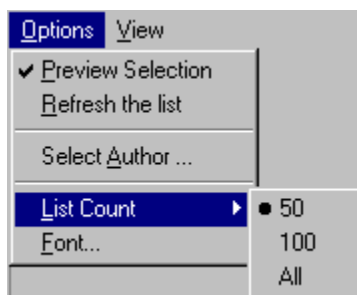
Notes:

- The Number of entries listed, and the type of entries will be displayed directly above the list.
- If the menu option 'Options | Preview Selection' is checked, then whenever a new entry is selected, the report will display in the bottom pane of the window.

9.3.1 Sorting the columns

Click on a column header to sort the list by that column. Click on the same column to reverse the order of the sort.

9.3.2 Menu Options

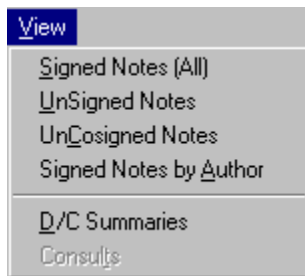


- **"Preview Selection"** displays the report in the bottom pane of the window whenever a list entry is selected.
- **"Refresh the list"** retrieves the latest list of Notes or Discharge Summaries from **VISTA**.

- **"Select Author"** selects the 'Author' to list images for a specific author.

Note: The list can be sorted by Author by clicking on the 'Author' column header.

- **"List Count"** selects how many of the most recent Notes to display.
- **"Font"** changes the font of the list.

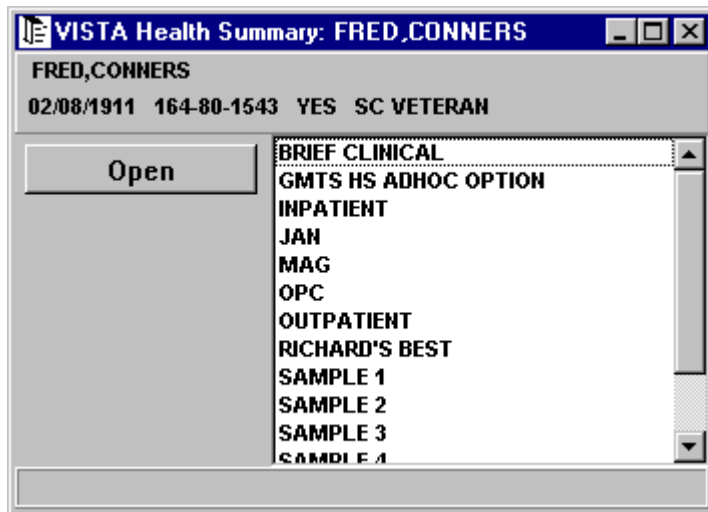


- **'Signed Note (all)'** lists the signed notes.
- **'Unsigned Notes'** lists the unsigned notes
- **'UnCsigned Notes'** lists the UnCsigned notes.
- **'Signed Notes by Author'** lists notes signed by a specific author.
- **'D/C Summaries'** lists Discharge Summaries for the patient.

9.4 Displaying a Health Summary or Patient Profile Report

9.4.1 Health Summary Report

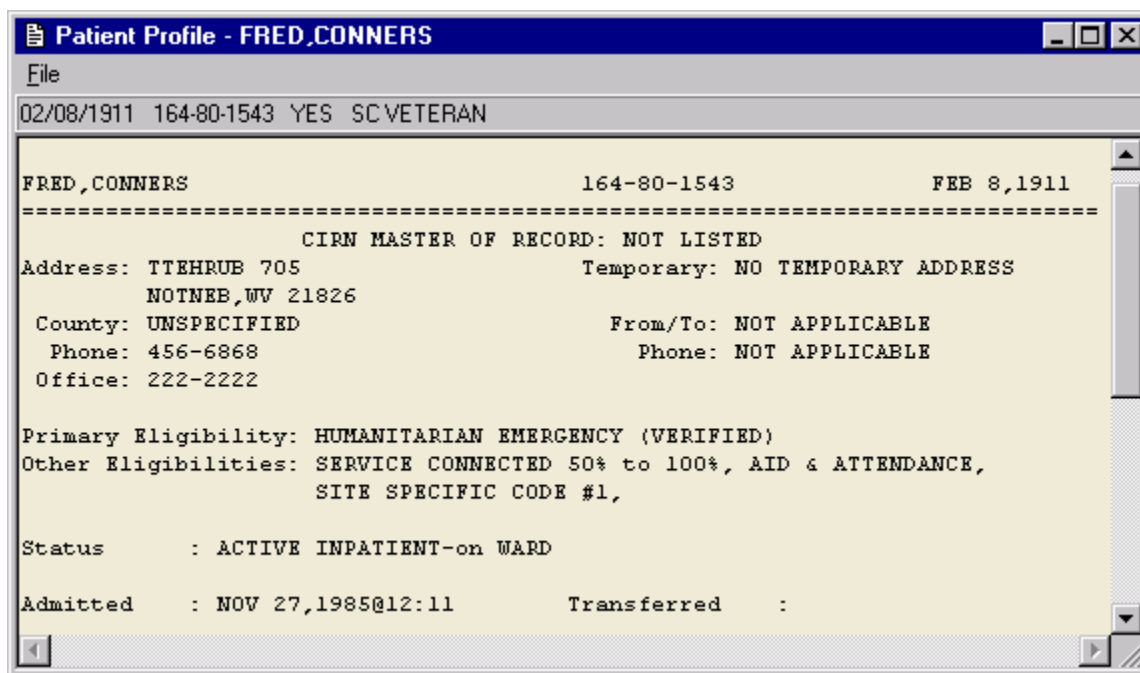
- In the Reports Menu of the **VISTA** Imaging System window, Health Summary, Patient Profile, and Discharge Summary reports can be selected.
- When Health Summary is selected, the Health Summary Reports Window is displayed.
- The Health Summaries available at the site are listed.



- Select a Health Summary from the list, then click on the 'Open' button to display the report.

Note: Imaging displays each report in a separate Report Window.

9.4.2 Patient Profile Report



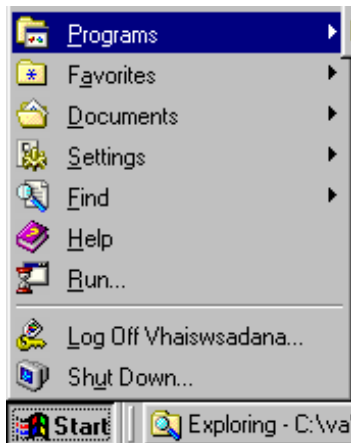
From the **VISTA** Imaging Display - Main Window, select the...

- Menu option 'Reports|Health Summary' or 'Health Summary' button to open the Health Summary selection window. Any Health Summary can be selected from the list.
- Menu option 'Reports|Patient Profile' to display the patient profile in a report window.

Chapter 10 Quick Start – Guide to Image Capture

10.1 STEP 1: Start **VISTA** Imaging Capture (1 of 2)

At the bottom left side of your Windows screen is the START button.

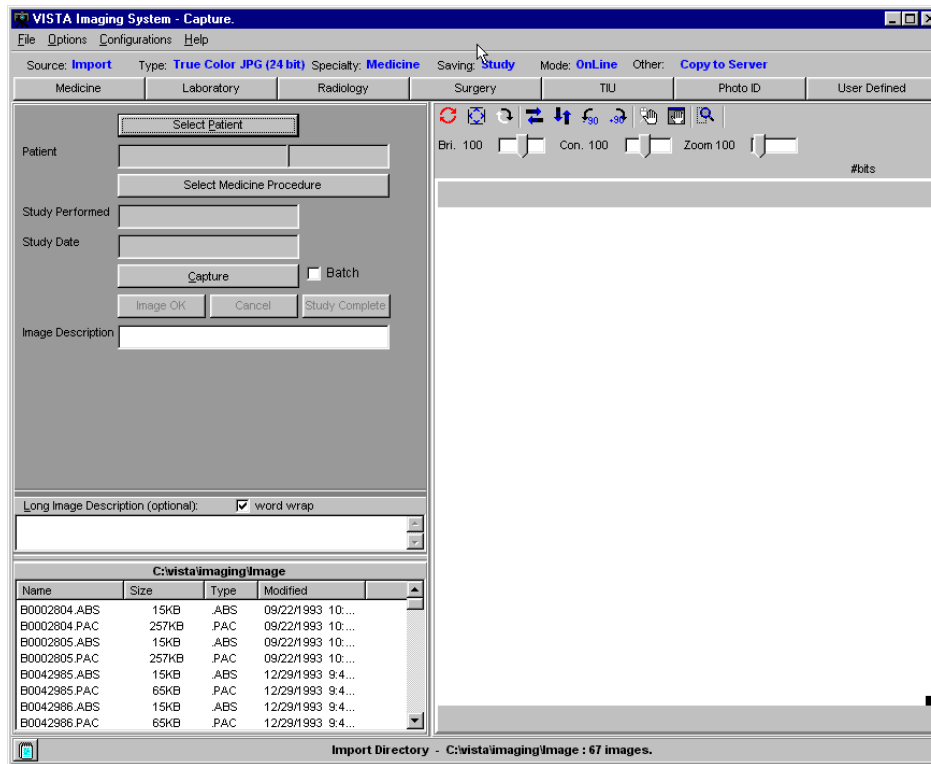


1. Click on START and move your cursor to Programs.
2. Move to **VISTA Imaging Programs**.
3. Move to **VISTA Imaging Capture 32bit**=>click.

Users of **VISTA** Capture must have their Imaging System Manager assign them the **VISTA** user rights and configure their workstation.

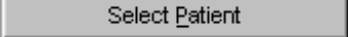
10.2 STEP 1: Start VISTA Imaging Capture (2 of 2)

The VISTA Imaging Capture Window looks like this:

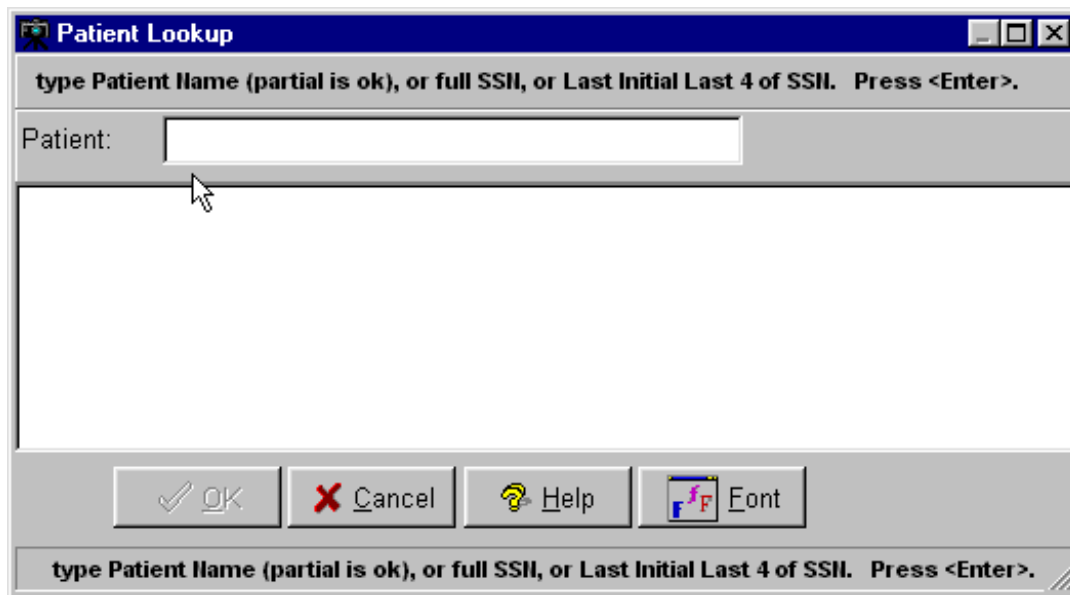


10.3 STEP 2: Select the Demo Patient from VISTA (1 of 4)

(A sample patient used for training)

1. Click on the  button (on the upper left side of the window).
2. When the VISTA logon window appears, enter your Access and Verify codes (these are provided by IRM staff).

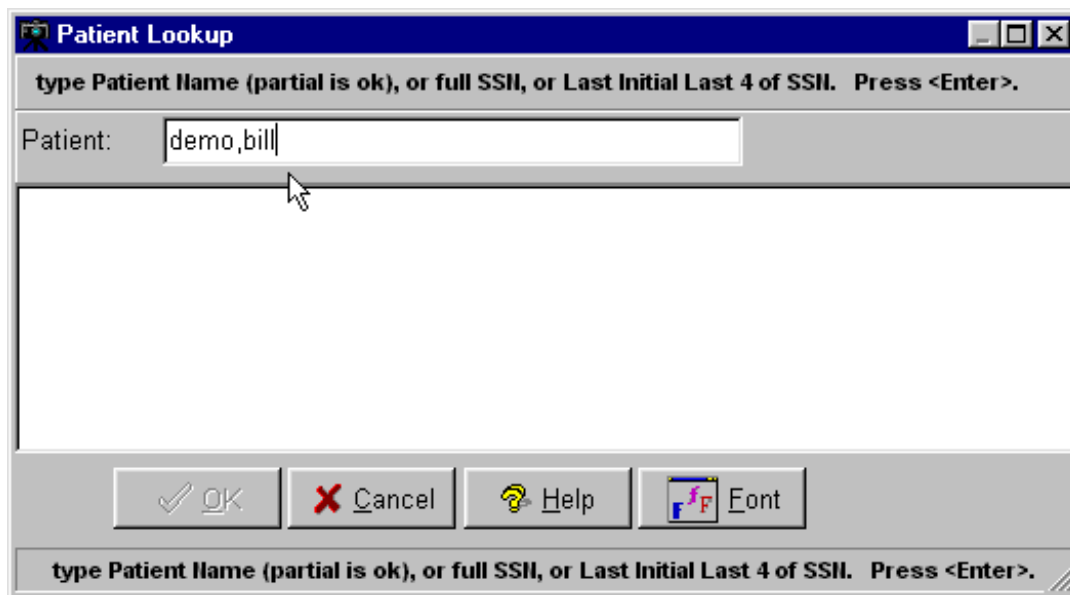
You will now see the Patient Lookup window.



10.4 STEP 2: Select the Demo,Patient from VISTA (2 of 4)

In the “Patient” box, enter the name of the demo patient at your hospital and press the <Enter> key.

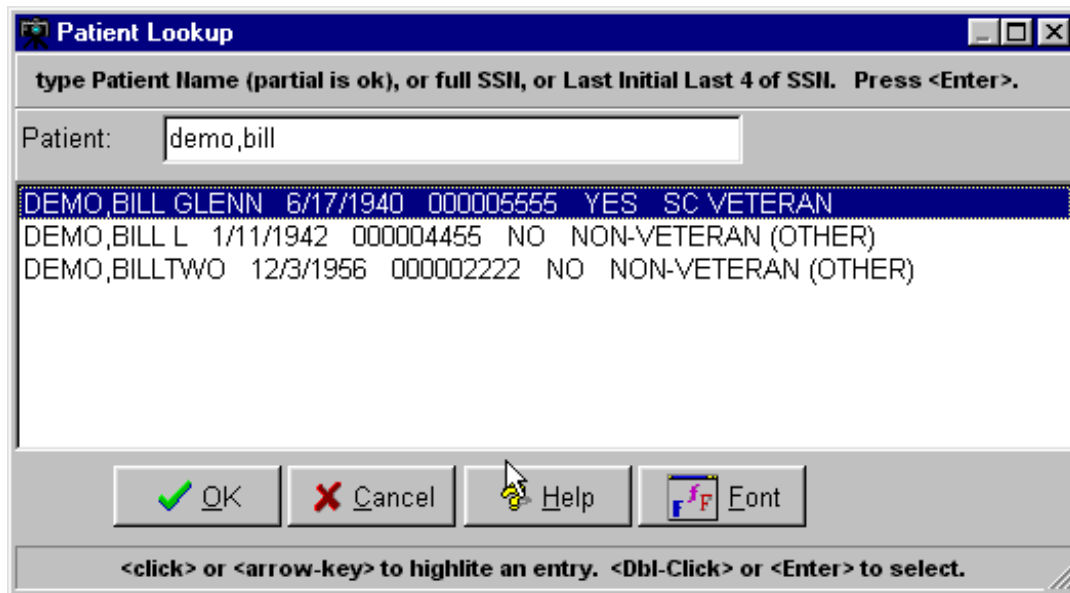
“Demo,Bill” will be used for this example.



The image shows a Windows-style dialog box titled "Patient Lookup". At the top, there is a blue title bar with the text "Patient Lookup" and standard window control buttons. Below the title bar, a grey instruction bar reads: "type Patient Name (partial is ok), or full SSN, or Last Initial Last 4 of SSN. Press <Enter>." The main area of the dialog features a text input field labeled "Patient:" on the left. The field contains the text "demo,bill" and has a mouse cursor pointing at it. Below the input field is a large, empty rectangular area. At the bottom of the dialog, there is a row of four buttons: "OK" (with a checkmark icon), "Cancel" (with a red X icon), "Help" (with a question mark icon), and "Font" (with a font icon). A second grey instruction bar at the very bottom repeats the text: "type Patient Name (partial is ok), or full SSN, or Last Initial Last 4 of SSN. Press <Enter>."

10.5 STEP 2: Select the Demo,Patient from VISTA (3 of 4)

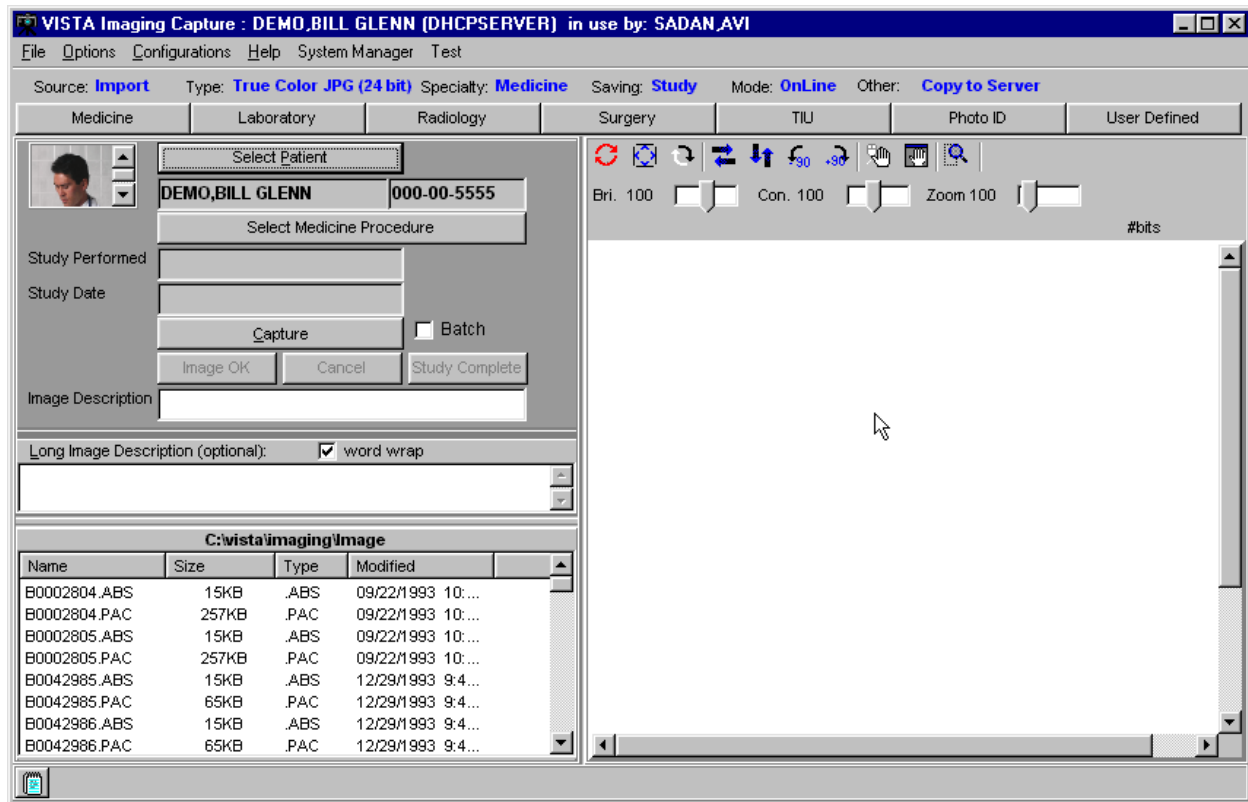
There may be several demo patient files provided for training purposes.



Click on the demo patient that you want and click on the OK button.

10.6 STEP 2: Select the Demo,Patient from VISTA (4 of 4)

The window now looks like this.



Notice that...

- Under the “Select Patient” button, the patient’s name and SSN appear.
- To the left of the patient’s name will appear a Photo ID (if one has been captured for this patient).
- The caption of the VISTA Imaging Capture window contains the name of the patient.
- The window caption also contains the name of the user (from the logon).

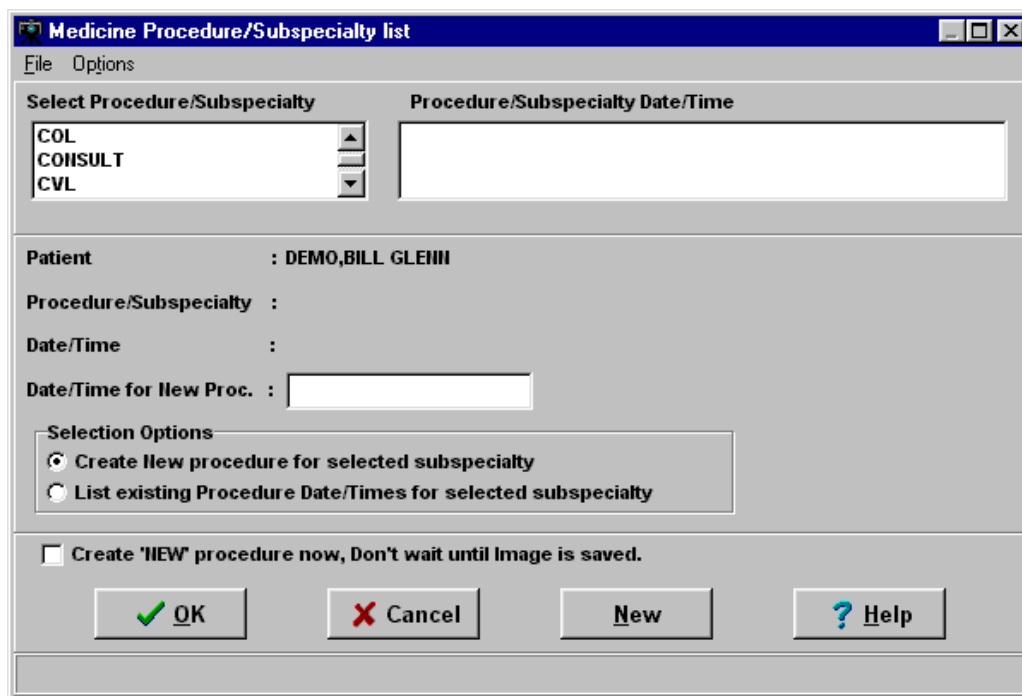
10.7 STEP 3: Select the Medical Procedure (1 of 4)

(Identify the medical procedure)

Click on the  button (just below the patient's name).

10.8 STEP 3: Select the Medical Procedure (2 of 4)

The Medicine Procedure/Subspecialty list looks like this.



Notice that...

- The patient's name appears in the upper portion of the window.
- The subspecialty list box in the upper left of the window contains abbreviations for the procedures to select from. For example, "col" is the abbreviation for colonoscopy.
- The "select options" (lower portion of the window) has the "create new procedure for selected subspecialty" selected.

10.9 STEP 3: Select the Medical Procedure (3 of 4)

1. Click on the selection “COL”. The window will now look like this.

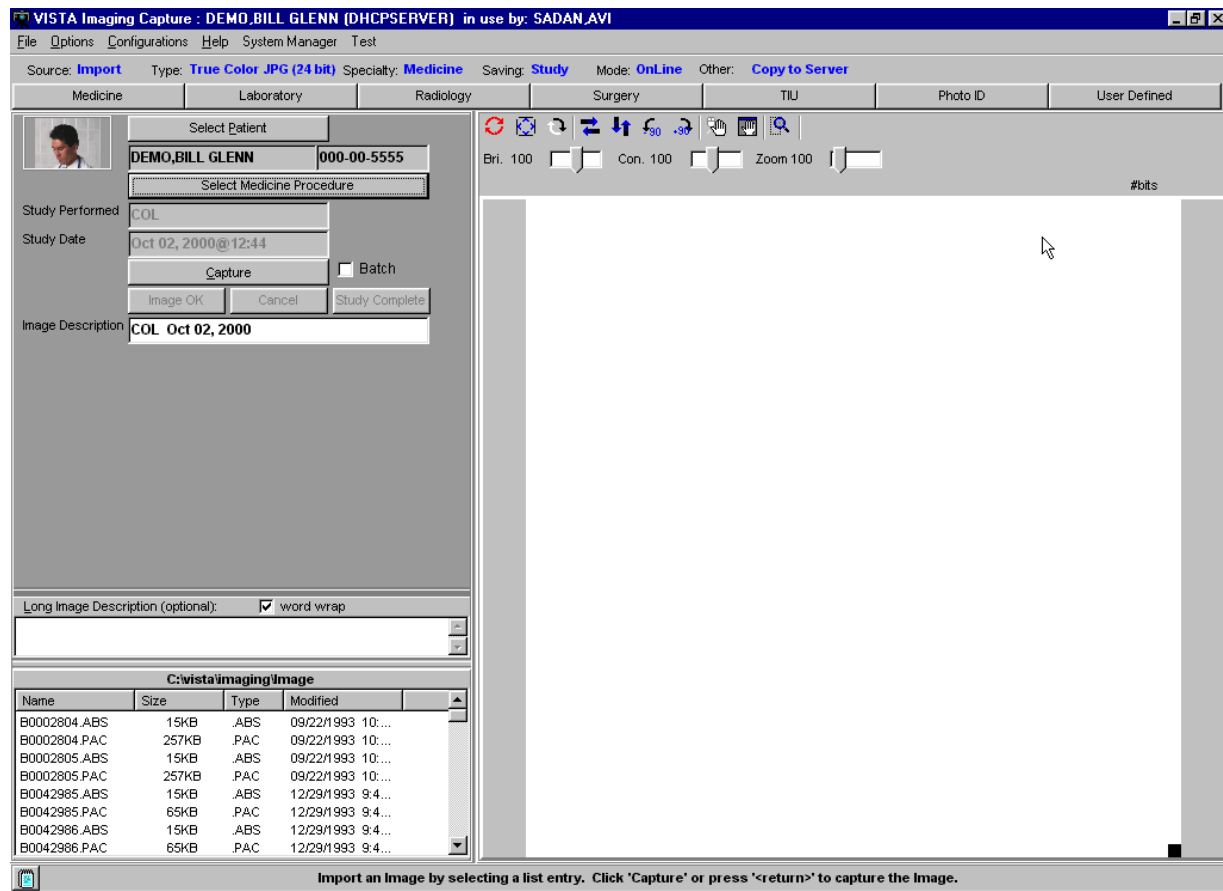
Notice that...

- Below the patient’s name the “Procedure/Subspecialty” shows “COL”.
- To the right of “COL” in **BLUE** is “COLONOSCOPY”.
- The date and time appears, followed by “New Procedure” in **BLUE**.
- At the bottom of the window (in the status bar) appears “Click OK or <dblclick> COL for a New COL Procedure”.

2. Click the OK button.

10.10 STEP 3: Select the Medical Procedure (4 of 4)

The window now appears like this:



Notice that...

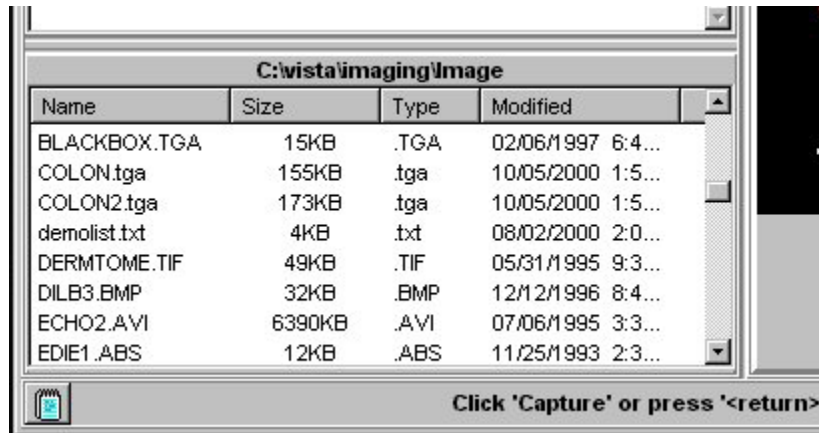
“Study Performed” contains “COL”

- “Study Date” contains the date and time.
- “Image Description” contains, by default, “COL” and the date.
- The description text can be replaced or modified by typing in the description box.

10.11 STEP 4: Select the Image to Import (1 of 2)

(Connect the image to a procedure)

In the lower left portion of the **VISTA** Imaging Capture window is the import directory.



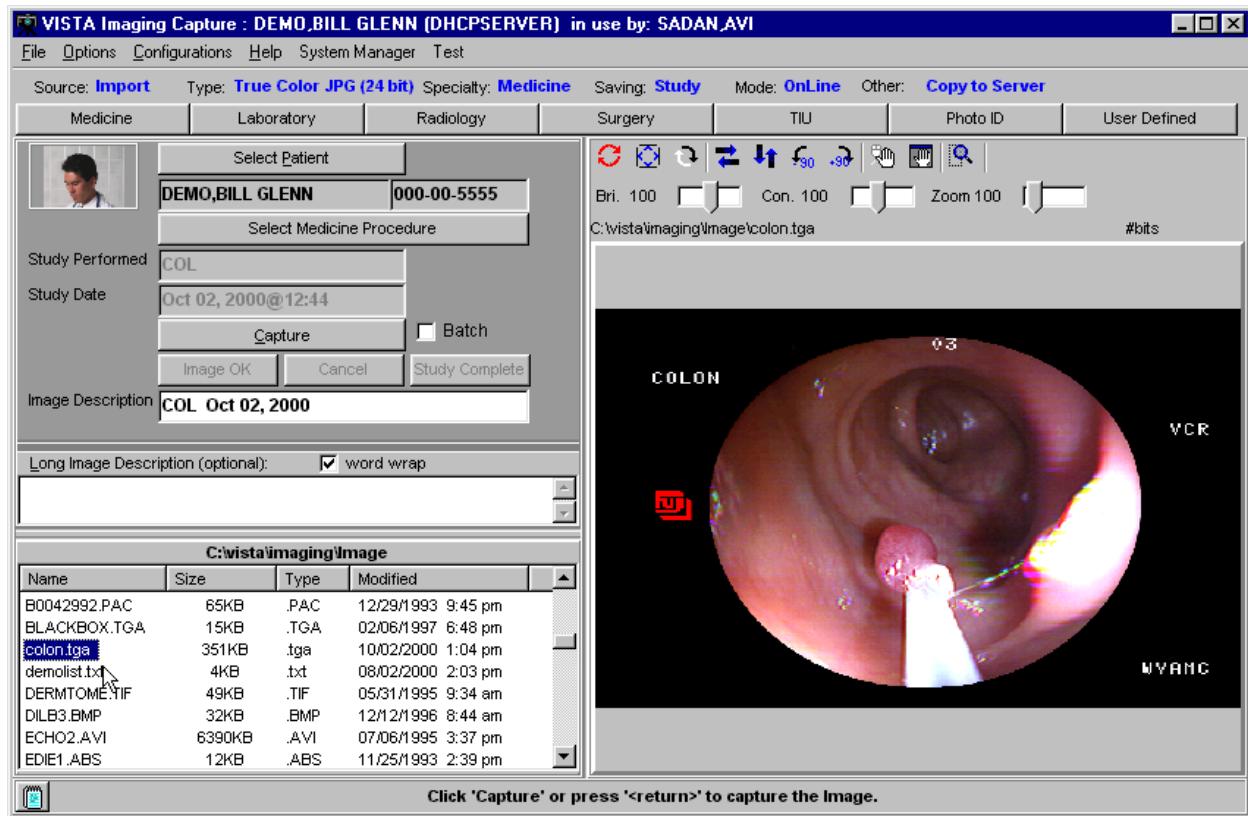
Notice that the import directory has a caption that displays the current directory:

C:\vista\imaging\image

1. Display the filename: colon.tga, using the scroll bar on the right of the import directory.
2. Click on the filename: colon.tga.

10.12 STEP 4: Select the Image to Import (2 of 2)

The **VISTA** Imaging Capture window will now look like this.




Notice that...

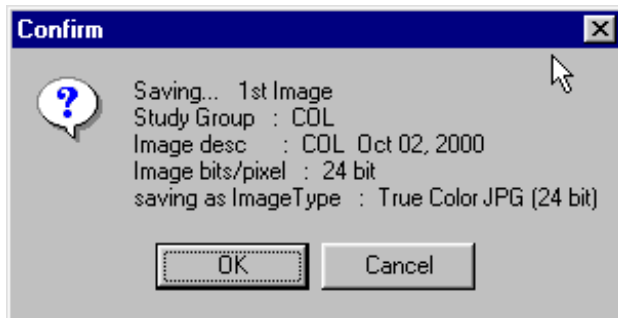
- The filename you selected is highlighted in **BLUE**.
- The right side of the **VISTA** Imaging Capture window displays the image.
- Just above the left top corner of the image is shown the complete path of the image: **c:\vista\imaging\image\colon.tga**.
- At the bottom of the **VISTA** Imaging Capture window is a status bar that displays:
“Click ‘Capture’ or press ‘<return>’ to capture the image.”

10.13 STEP 5: Capture the Image (1 of 2)

(Store the first image)

1. Click on the  button at the left side of the *VISTA* Imaging Capture window.

The Confirm Window will look like this.

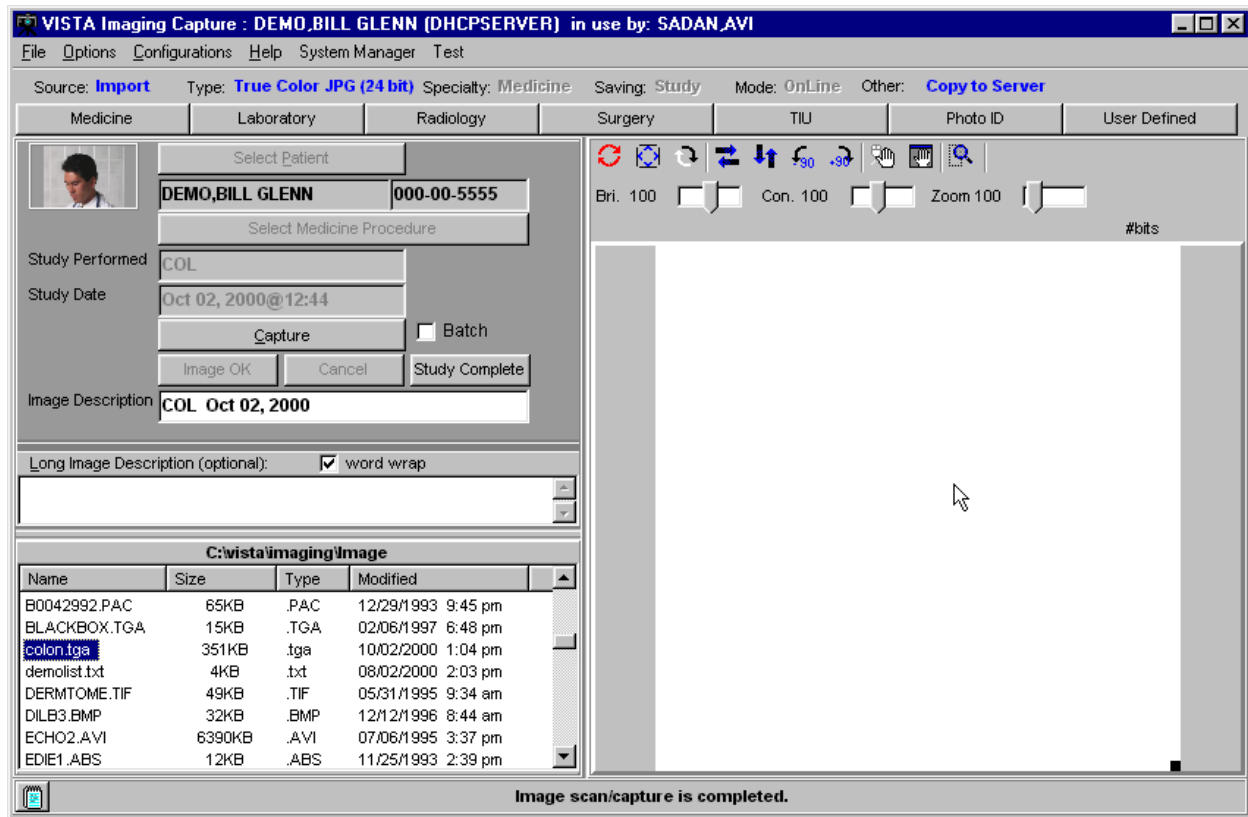


Notice that the first line shows “1st Image” – since it is being captured using the group option.

2. Click the OK button.

10.14 STEP 5: Capture the Image (2 of 2)

This *VISTA* Imaging Capture window will look like this.



Notice that- the status bar at the bottom of the window displays:

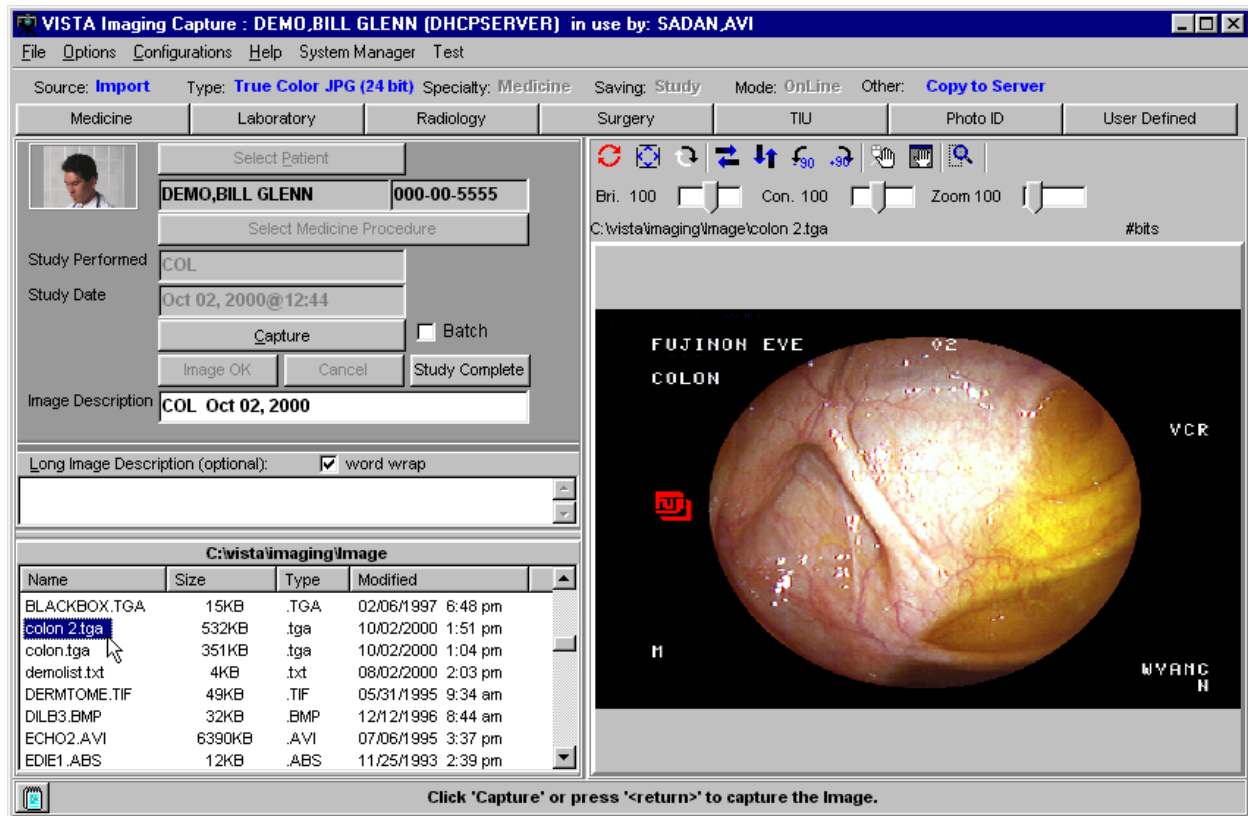
“Image scan/capture is completed.”

10.15 STEP 6: Capture a ‘Second’ Image (1 of 2)

(Storing a group of images)

1. Use the scroll bar on the import directory to find a second image.
2. Click on the filename: **colon 2.tga**.

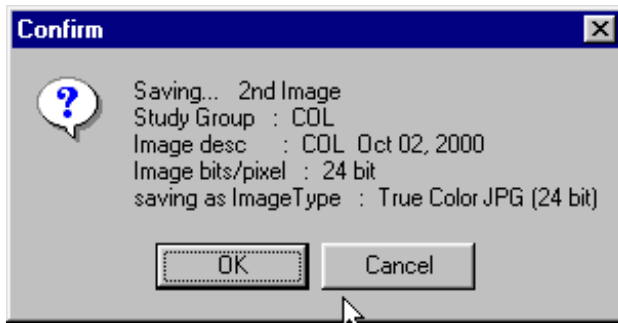
The **VISTA** Imaging Capture window looks like this.



10.16 STEP 6: Capture a ‘Second’ Image (2 of 2)

1. Click on the “Capture” button.


The Confirm Window appears.



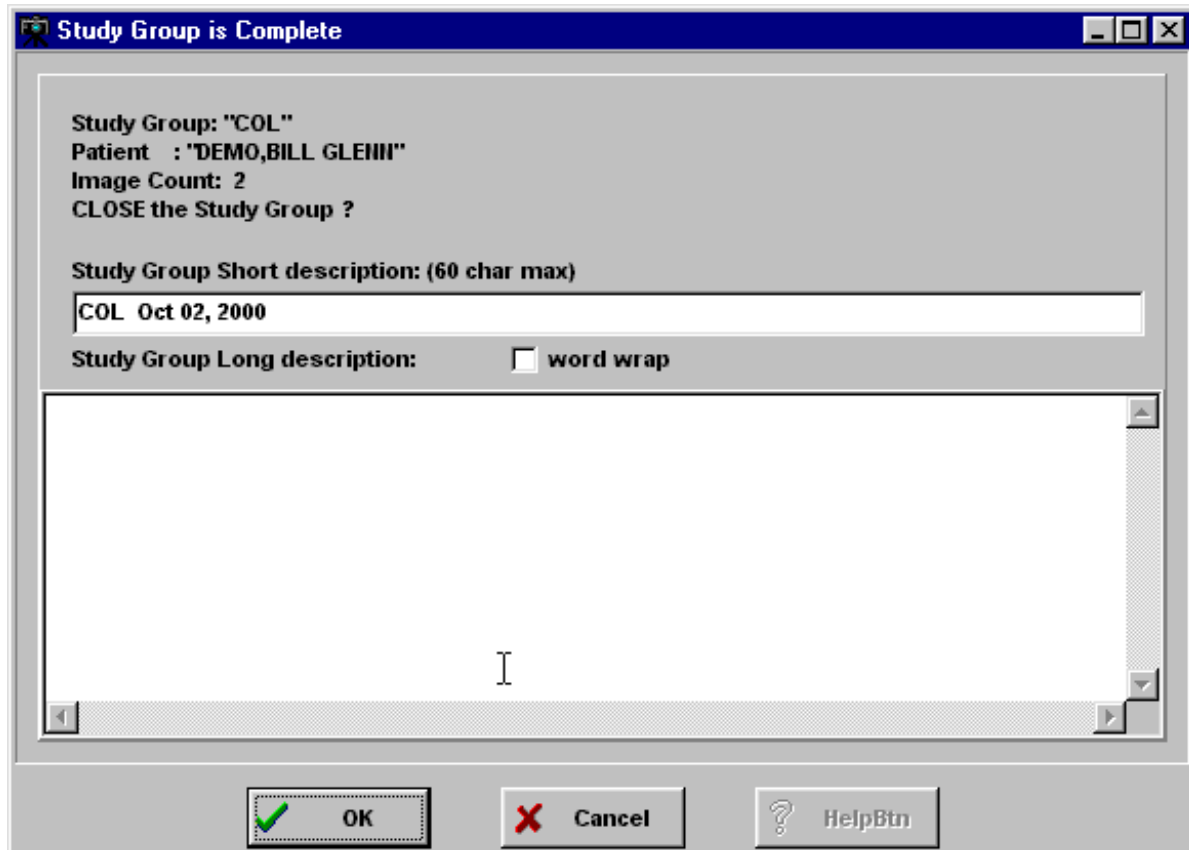
Notice that the first line shows: “**Saving... 2nd Image**”.

2. Click on the OK button.

10.17 STEP 7: Complete the Image Capture Study (Finishing the group)

Click on the  button.

The Study Group is Complete window displays.



Notice that...

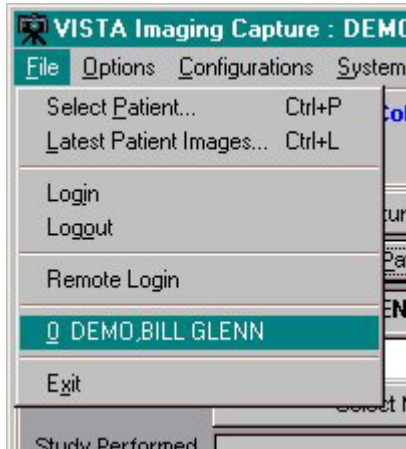
- The name of the Study Group is "COL".
- The patient's name appears.
- The Study Group Short description appears (and can be edited).
- The bottom portion of the window can be used to enter a **"Study Group Long description:"**

10.18 STEP 8: View the Captured Image (1 of 2)

(Check an image for that patient)

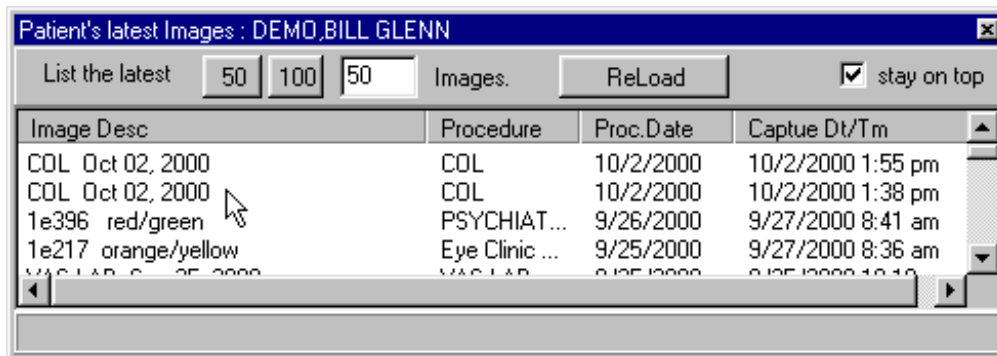
The last 10 patients accessed are listed on the 'File' menu.

1. Click on 'File' then **"DEMO,BILL GLENN"** Menu option.



2. Click on the File menu and select the option **"Latest Patient Images..."**

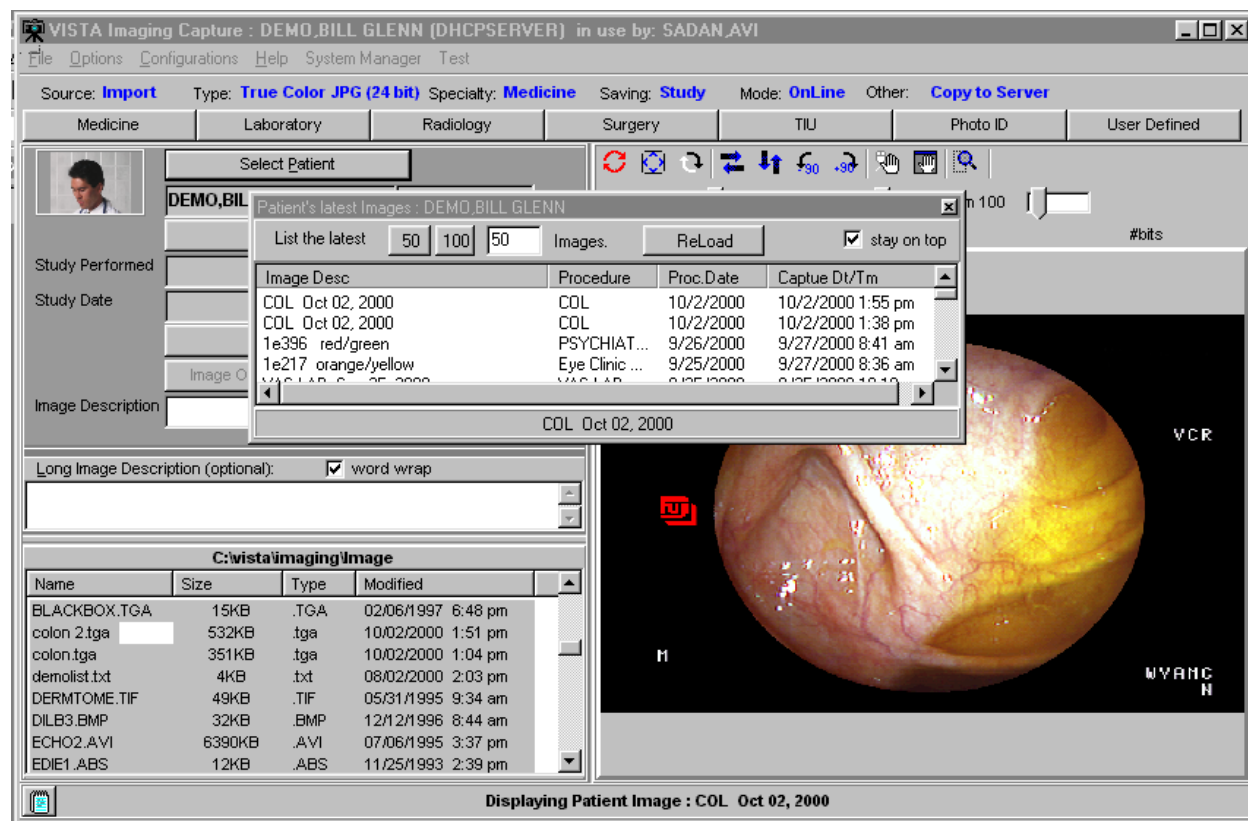
The Patient's latest Images Window appears.



3. Click on the first entry in the list.

10.19 STEP 8: View the Captured Image (2 of 2)

The *VISTA* Imaging Capture window looks like this.



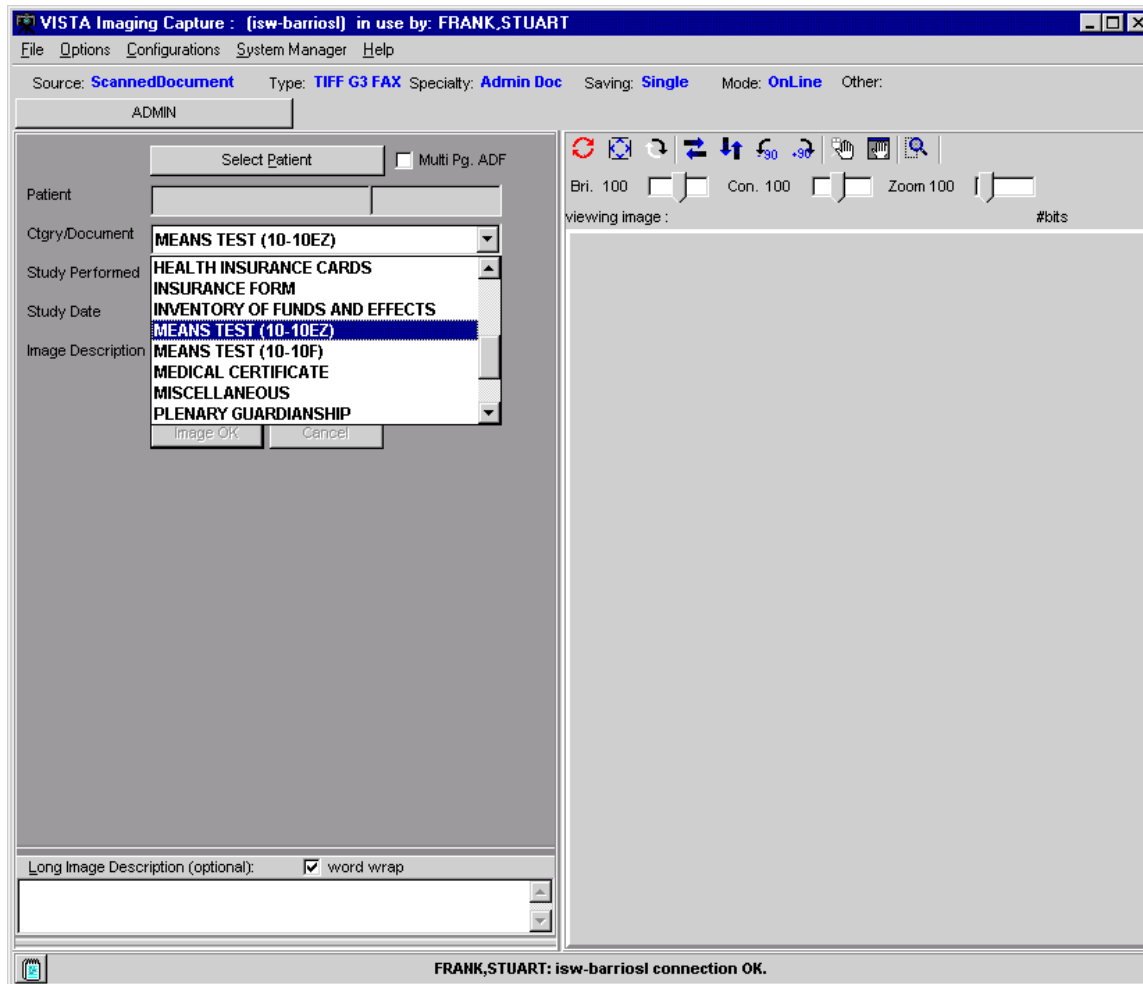
Notice that the image displayed is the one that was selected in the box.

Chapter 11 Document Scan

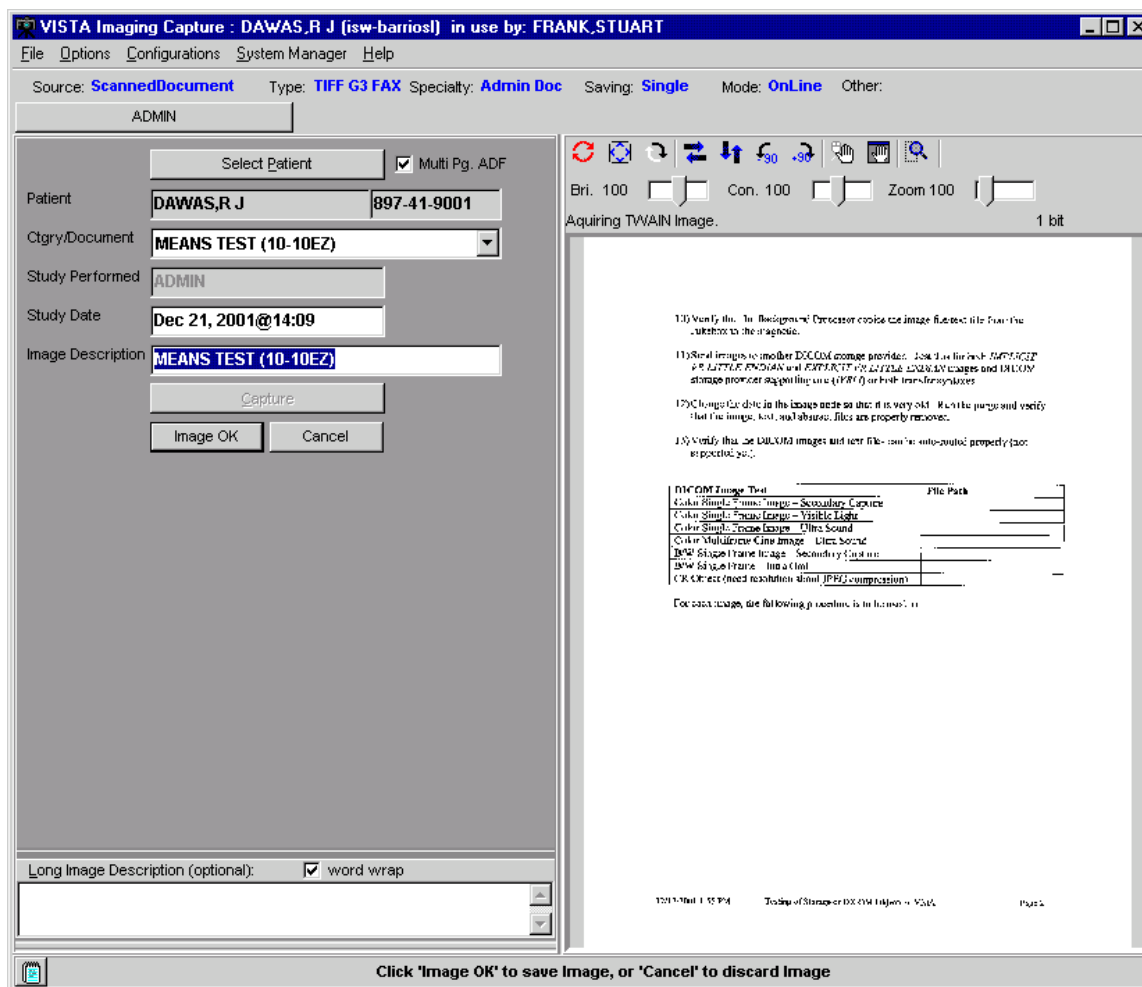
11.1 Performing a Document Scan Procedure

1. Click on the ADMIN button.
2. Select the Patient whose document will be scanned by clicking the “Select Patient” button.
3. Select an Admin Doc Type: MEANS TEST (10-10EZ) or MEANS TEST (10-10F).
4. Enter a date such as 12/14/2001 or T for today’s date.

The Image Description will say MEANS TEST (10-10EZ) or whatever Document type was selected from the pull-down list. The description may be edited, but probably will not need to be.

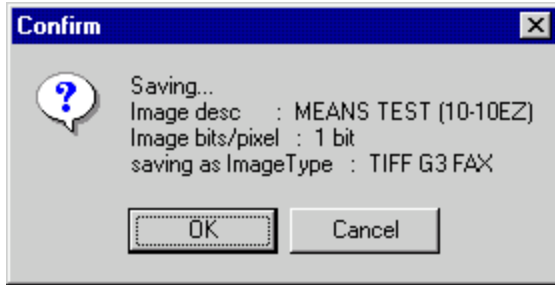


1. Place MEANS TEST document on scanner. Click on the capture button to begin scanning.
2. Check the “Multi Pg.ADF” box if you wish to use the automatic document feeder on your scanner. Leave this box unchecked if you will be putting the page on the glass platten.
3. Click on the capture button to begin scanning.



You will hear the scanner working. The scanned image will appear (after a short period of time) in the white window on the right side.

You will be asked to confirm the save settings.



4. Click on the OK button.

When the capture process is completed, the scanned document will disappear from the right-hand window and you will be able to scan the next document.

The image will now be available for viewing on the clinical workstation. It can also be viewed from the capture workstation by selecting the File option and then "Patient Latest Images".

Chapter 12 Adding Images to Patient Records

12.1 Introduction

VISTA Imaging not only functions as an image browser, it allows users to add images to patient records. This chapter explains how to add images from various sources to patient records, and associate those images with procedures and reports.

12.2 Configuring Your Workstation to Add Images to Patient Records

12.2.1 Introduction

Whenever a new device is installed on your image capture workstation, you will need to configure the new capture device. Note the following:

Task	Action	Result
To configure the new capture device...	Select Configuration Settings under the Configurations menu of the VISTA Imaging Capture Window.	Opens the Configuration Window.
To configure the capture software for the new device...	<ol style="list-style-type: none">1. Select the Input Source, Image Type, Specialty, and either single or group.2. At this time, you may create a button for this configuration by pressing the 'Save Settings As...' button3. Click on the OK button.	Configures the VISTA Imaging capture software for the new capture device.

12.2.2 Declaring an Input Source for the Image

The Input Source identifies the type of input device being configured. It may be any of the following:

- A Lumisys X-ray scanner, model 75, 100, 150 or 200, which produces a 1K x 1K x 8-bit grayscale image and optionally a 2K x 2K x 12-bit diagnostic quality grayscale image

- A Truevision **VISTA** image capture board which produces a 24-bit color or 8-bit black and white image from RGB NTSC input
- A Matrox Meteor image capture board which produces a 24-bit color or 8-bit black and white image from RGB, S-Video, or Composite NTSC inputs
- Image Import from your local disk or a network drive
- A standard TWAIN device such as a color, X-ray, or document scanner or a still video camera; these may produce a 1-bit or 8-bit black and white image or a 8-bit or 24-bit color image (in the future, 12-bit 2K x 2K diagnostic quality X-ray images will be supported)
- A customized TWAIN source called ScanECG which produces a 256 color scan at 100x100 dpi
- A customized TWAIN source called ScannedDocument which produces a 1-bit 200x200 dpi document (FAX quality)

Note: Clicking on the “TWAIN Source” button displays a list of all TWAIN sources connected to the workstation for you to choose from. If only one TWAIN Source is connected to your workstation, which is usually the case, it will be automatically selected. You do not have to click on the TWAIN Source button; no list will be displayed if the button is selected.

Selections that appear in gray letters are disabled and not available on your workstation. Note the following:

Task	Action	Result
To select an input type (that which appears in black letters)...	Click the left mouse button on the input type you will be using.	<ul style="list-style-type: none"> • A small check will appear beside your selection. • Your selection will also be indicated on the Current Settings Toolbar near the top of the capture window.

12.2.3 Selecting an Import Mode

Import mode is used when a standalone device has been used to capture images to the local workstation or to a shared drive. The user may identify the image, view it, and then import it into the **VISTA** Imaging System. Three modes of import are supported, including:

- **“Copy to Server” mode:** copies the file from the workstation disk to the **VISTA** Imaging server, renaming the copied file to a name assigned by the Imaging System. The file

extension remains the same, and no additional compression is performed. The following file formats are supported:

- **TGA** ○ **JPG** ○ **WPG**
 - **TIF** ○ **PCX**
 - **BMP** ○ **GIF**
- **“Convert to TGA” mode:** converts the workstation file from its existing format to the TGA format. The image is then saved to the **VISTA** Imaging server using a name assigned by the Imaging System. The file extension will be TGA. This is an uncompressed format. If your site is running **VISTA** Imaging V. 1.0 workstations with AT-**VISTA** boards for display, you must use this option.
 - **Convert File Format to Default** allows sites to convert imported images to a selected ImageType format. The Image will be converted to the selected 'ImageType'. Image Type is selectable at runtime from the menu option 'Configurations|Configuration Settings'.

Using any of these options, the original file will remain on the workstation disk and a copy will be made on the **VISTA** Imaging server.

A Default input mode must be selected when the workstation is configured by IRM staff.

12.2.4 Declaring the Image Type

The Image Type is used to indicate the type of image resulting from the capture process. Possible types include:

Image Type	Characteristics
X-ray	8 or 12-bit grayscale image
True Color TGA True color JPG	24-bit image; AT VISTA board produces 768x486; Meteor produces 640x480 pixels; TWAIN produces a variety of resolutions
Black and white	8-bit grayscale image, 768x486 or 640x480
Document Uncompressed TIF	1-bit, 200x200 dpi (or other resolution)
Document G3 FAX Compressed TIF	1-bit, 200x200 dpi, 8.5” x 11.0” image
256 Color	8-bit color image, variable spatial resolution depending on source
Motion Video	AVI motion video
Audio	WAV file (not currently supported)

These image types are not available for all input devices. Types that are not available will appear gray on the configuration window, and you will not be able to select them. Note the following procedure:

Condition	Action	Result
If the correct image type is not checked...	Click your mouse on the type of image you will be capturing.	Selects the desired image type.

X-ray is used for scanned x-ray films of any sort. This includes the following scanners:

- Lumisys
- Vidar
- Howtek

It may also be used for other black and white images where exact manipulation of the gray scale is necessary.

Black and White is used for:

- Ultrasound
- Cardiac catheterization
- Pathology fluorescent stains, etc.

Color should be used for all color captures, including:

- AT-VISTA board
- Meteor board
- TWAIN color sources
- Still video camera sources
- Color imports

The Document type is for 1 bit scanned documents.

Motion video: Only video files of type .AVI are supported in VISTA Imaging System.

Note: Audio files are not available in VISTA Imaging System.

12.2.4.1 Selecting a TWAIN Image Type

If you have selected a TWAIN device, you will normally have four choices for image type in the TWAIN window for the input device.

	TWAIN Setting	VISTA Imaging Capture Image Type	Used for...	File produced
Choice 1	Lineart	Document uncompressed TIF or Document G3 FAX compressed TIF	Printed text, diagrams annotated in black	1-bit document, TIF format
Choice 2	Gray	X-ray or Black and White	X-rays and other radiologic images, black and white photographs such as electronmicrographs	8-bit grayscale, default format
Choice 3	256 Colors	256 Colors	Scanned results such as EEG, ECG, electrophoresis whether color is used; Text and diagrams annotated in color	8-bit color image, TIF format
Choice 4	True color	True Color TGA or True Color JPG	Color photographs, 35mm slides, still camera input	24-bit color image, default format

Be sure that the image type selected for the **VISTA** Image Capture corresponds to the image type selected on the TWAIN window. Depending on the equipment manufacturer, different TWAIN Image Types may be listed; in fact, not all vendors support all of these image types.

12.2.5 Declaring the Specialty to Associate with Captured Images

Select the **VISTA** package to associate with captured images. Choices include...

- Laboratory (requires version 5.2 patch LR*5.2*34)
- Medicine (requires V. 2.3)
- Radiology (requires V. 5)
- Surgery (requires V. 3.0)

- Progress Note (TIU Document)

Selecting one of the above Specialty Packages will enable a selection button on the Capture Window. The user will be required to select from a list of existing reports from the selected specialty. The captured images will be associated with the selected report.

Note: The Medicine specialty will also enable creating a new report.

- User Defined Specialty/Category

User Defined Specialty/Category is not a **VISTA** Package. The user will have the option of selecting an entry from the MAG DESCRIPTIVE CATEGORIES File or entering a free text description. Also the 'Study Date' edit field will be enabled and an entry is required.

Note: This is a VA FileMan date field; entering 'T', 'T-1' will work.

- Patient Photo ID

This option will define the captured image as the Patient Photo ID. The Photo ID is displayed on the Imaging Display and Capture windows.

- Administrative Documents

This option will allow the user to select the administrative document title from a list.

12.2.6 Declaring the Capture Mode

At the present time, the only two choices available are online and test mode. Online indicates that images will be saved in the network servers and will be associated with **VISTA** patients.

Test Mode on the Capture Configuration window can be used to test the new input device without saving the image, or associating it with a patient.

12.2.7 Declaring How the Image will be Saved

Review the following information:

- **Study Group:**
 - Images can be saved as part of a group of images (e.g., three images might be saved for a colonoscopy).
 - If these are saved as a group, only a single abstract will be displayed in the abstract view window.

- When the user clicks on this abstract, the group view window will open and show the abstracts for the images belonging to the group.
- A group may contain more than one type of image, (e.g., color images of colonoscopy views and a scanned document representing a diagram of the lesion's location in the colon).
- **Single Images**: Images can be saved as single images. In this case, each single image's abstract will appear in the Abstracts View window.

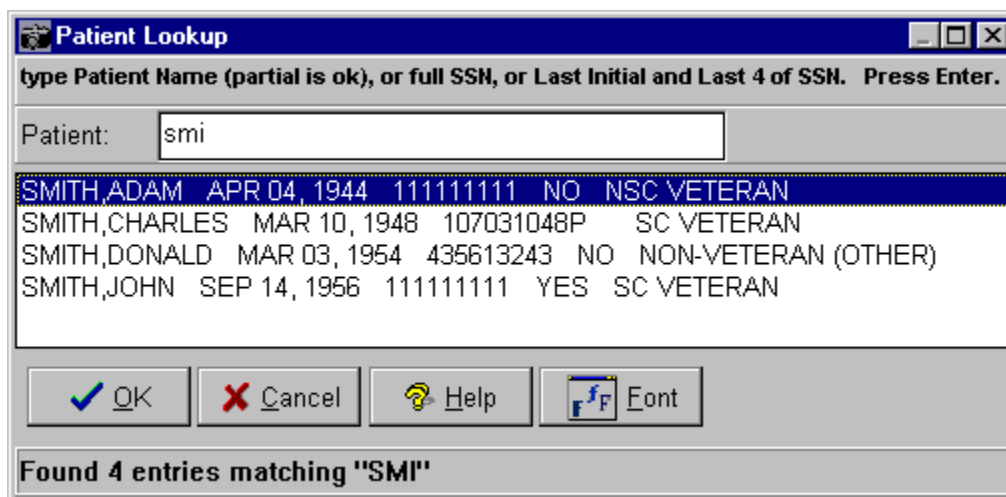
12.3 Selecting the Patient

12.3.1 Introduction

To select a **VISTA** patient, follow these steps:

Step	Action
1	Sign into the system.
2	<p>Select the menu option 'File Select Patient' or click the 'Select Patient' button. The Patient selection window will be displayed. In the edit field enter one of the following:</p> <ul style="list-style-type: none"> • patient's name (or beginning portion of the name, last name,first name) • patient's social security number • VISTA shortcut id (first letter of the patient's last name followed by the last four digits of the patient's social security number) at the Patient: prompt in the VISTA Imaging Display Window.
3	Press the <Enter> key when you are done.

If more than one patient matches your entry, you will be presented with a list to choose from on the Patient Selection Window.



The **VISTA** Imaging System displays patient demographic information for the selected patient on the information panel below the Patient Selection text box. This includes:

- Date of birth
- Social Security number
- Service-connected status
- Type of patient.

12.3.2 Verifying Patient Identification

- The date of birth and Social Security number of the selected patient are displayed alongside the name of each patient.
- To determine whether you have selected the correct patient, compare this information with the date of birth and Social Security number of the patient that you want.
- The Patient Lookup Window, which shows a list of patients that match the patient name entered when more than one name is found, also lists patient demographics.

12.4 Selecting the Procedure Associated with the Image

Note: It is important to select the Procedure or Exam that corresponds to the images to be captured.

The specialty was selected as described in Section 12.2.5. The needed input data fields for that specialty will be displayed on the “**VISTA** Imaging System – Capture” window. The user will have to enter certain data depending on the selected specialty.

12.4.1 Selecting a Medicine Procedure

1. Click on the “Select Medicine Procedure” button. The selected patient name will be displayed in the middle of the Medicine Procedure/Subspecialty window.
2. To select a medicine procedure...

In the Selection Options group, select ‘List existing Procedure Date/Times for selected Subspecialty’.

Medicine Procedure/Subspecialty list

File Options

Select Procedure/Subspecialty

COL
CONSULT
ECG
ECHO
EEG

Procedure/Subspecialty Date/Time

FEB 26, 1993@11:49 COL FRED,CONNERS
MAR 03, 1993@22:00 COL FRED,CONNERS

Patient : FRED,CONNERS

Procedure/Subspecialty : COL **COLONOSCOPY**

Date/Time :

Date/Time for New Proc. :

Selection Options

☐ Create New procedure for selected subspecialty

☒ List existing Procedure Date/Times for selected subspecialty

☐ Create 'NEW' procedure now, Don't wait until Image is saved.

☒ OK ☐ Cancel

2 COL Procedures found for Patient FRED,CONNERS

Step	Action	Result
1	<dbl-click> on the desired entry in the Procedure/Subspecialty list.	Loads the Procedure/Subspecialty Date/Time list with patient procedures.
2	Click on the appropriate procedure the Procedure/Subspecialty Date/Time list.	Selected Procedure Date/Time will display in the middle of the window.
3	Click the 'OK' button.	Saves the selected Procedure Date/Time and Exits the window.

3. To create a new procedure...

In the Selection Options group, select 'Create New Procedure for selected Subspecialty'.

Step	Action	Result
1	Click on the desired entry in the Procedure/Subspecialty list	Selects the Procedure/Subspecialty.
2	Click on OK.	Creates a New procedure in the Medicine package and Returns to the main capture window.

12.4.2 Selecting a Radiology Procedure

1. Click on the "Select Radiology Exam" button. The selected patient name will appear in the panel above the Radiology Exam List. All exams for the patient will be listed including the case number, procedure ordered, and status.

#	Day-Case	Procedure	Exam Date	Exam status / Report status
1	100898-71	UPPER GI W/O KUB	10/08/1998	WAITING FOR EXAM / No Report
2	050797-56	CT ABDOMEN W&W/O CONT	05/07/1997	COMPLETE / Verified (I-ROU)

Radiology Exams: DEMO,JANE

2. To select the radiology procedure being performed, follow these steps:

Step	Action	Result
1	Click the left mouse button on the correct radiology exam.	Selects the correct radiology exam.
2	Click on the OK button.	Returns to the capture window.

12.4.3 Selecting a Laboratory Procedure

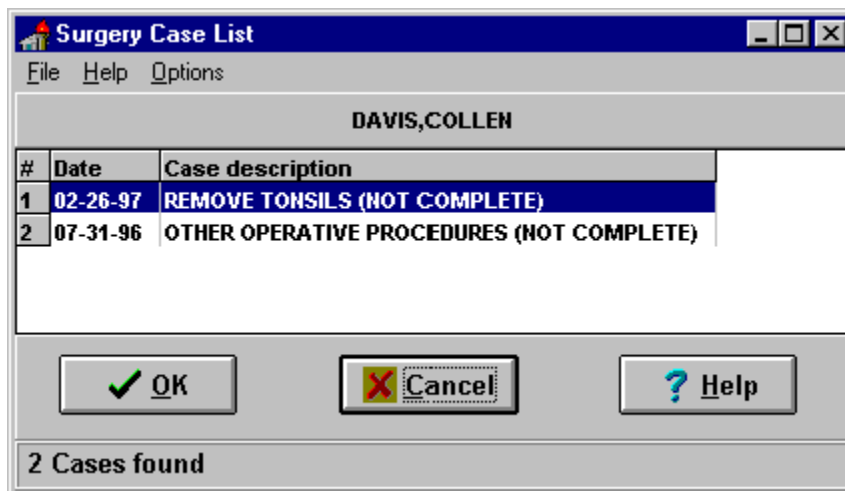
Name	SSN	Date/Time	Acc #	Pathologist	Specimen
DEMO,JANE	459887777	05/06/1997	SP 97 3	NOSS,ROD	LEFT TONSIL
DEMO,JANE	459887777	05/06/1997	SP 97 3	NOSS,ROD	RIGHT TONSIL

2 Entries returned

To select the Laboratory Procedure, follow this series of steps:

Step	Action	Result
1	Click on the “Select laboratory Specimen” button.	Opens the “Anatomic Pathology Lab Selection” window.
2	Select the laboratory section from the section drop-down list box.	
3	Enter the accession year and the number.	
4	Click on the “Search” button.	Imaging displays a list of specimens.
5	Choose a specimen by clicking on it.	
6	Click the “OK” button.	

12.4.4 Selecting a Surgery Procedure



To select the surgery procedure being performed, follow these steps:

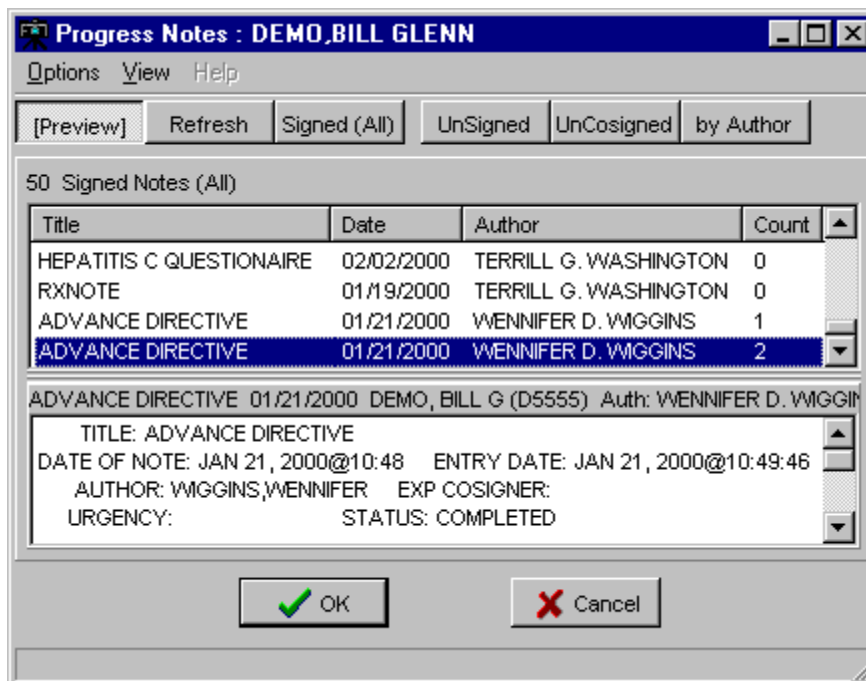
Step	Action	Result
------	--------	--------

Step	Action	Result
1	Click on the “Select Surgical Procedure” button.	Opens the “Surgery Case List” window to display the surgical procedures for the patient.
2	Choose a procedure by clicking on it.	
3	Click the “OK” button.	

12.4.5 Selecting a Progress Note

To select the Progress Note, follow this series of steps:

Step	Action	Result
1	Click the ‘Select Progress Note’ button	Opens the Progress Notes listing window.
2	Click on the desired Note in the listing.	Selects the Note.
3	Click on the ‘OK’ button.	Exits the window.



Note: The listed Progress Notes can be filtered by clicking on one of the function buttons or selecting an ‘Options’ menu option. (See the Progress Notes Window selection in the Appendix H.10 for more details).

(The Note can be previewed by clicking the ‘Preview’ button.)

12.5 Acquiring the Image

12.5.1 Introduction

Step	Action	Result
1	Click with the left mouse button on the Capture button.	<ul style="list-style-type: none"> Imaging executes the capture software for the “Input Device” that you have selected. Depending on the input device, Imaging displays one of several different capture windows.
2	<ul style="list-style-type: none"> Click on the “Image OK” button if the captured image... <ul style="list-style-type: none"> Is correct and the quality is good. (or) Click on the “Cancel” button if the captured image... <ul style="list-style-type: none"> Is not the correct image or... Is not of good quality. 	<p>Once you have captured an image, Imaging:</p> <ul style="list-style-type: none"> Displays the image. Enables the “Image OK” and “Cancel” buttons.

12.5.2 Scanning

The following will occur:

Sequence	Event
12.5.3 1	You should hear the X-ray or document scanner running.
12.5.4 2	Subsequently, after some seconds, an image will appear in the image box on the right side of the VISTA capture window.
12.5.5 3	If necessary, you may use the rotate or flip button to adjust the image.

12.5.6 Frame Grab with AT VISTA Board

The following will occur:

Sequence	Event
1	If you have an AT VISTA board, a live image will appear on the Image monitor.
2	A window will open prompting you to press a key when ready to capture the image.
3	You will then be given a choice to accept the image if it is OK or capture again.
4	After a few seconds, an image will appear in the image box on the right side of the capture window.

12.5.7 Frame Grab with Meteor Board

If you have a Meteor board, a window will open on your workstation monitor and you will see the live image in the window. Note the following procedure:

Step	Action	Result
1	Click on the Freeze button to capture the image.	
2	If you do not like the quality of the image, click on the Continue button, and the window will again display a live image (without performing a capture). You may then repeat the capture procedure.	
3	Click on the Image OK button when you have an acceptable frozen image.	After a few seconds, an image will appear in the image box on the right side of the capture window. The meteor window will remain open with a live image, but focus will move to the capture window.

12.5.8 TWAIN Still Video Cameras

If you have a still video camera with a TWAIN interface, you must first connect up the camera to the workstation. Be careful to do this with the workstation powered-off, if the instructions recommend this.

There are two basic types of interfaces:

- The type that inputs images that have been recorded by the camera at a previous time.
- The type that operates in live mode, inputting images as they are captured.

Note the following:

Condition	Action	Result
If your camera captures images before connecting to the workstation, when you click on the Capture button...	Follow the instructions provided with the camera and select the image to be captured by the VISTA Imaging System.	<p>You may hear a noise from the camera.</p> <p>A series of images will probably appear in the TWAIN window (depending on the software provided with your camera).</p> <p>After performing the camera instructions and selecting the image to be captured, the image appears in the VISTA Capture window.</p>
If your camera captures images while being connected to the workstation	Follow the instructions provided with the camera.	As you capture an image and indicate that it is acceptable, it will appear in the VISTA Capture window.
If your camera provides image download capability...	<p>Follow the instructions provided with the camera and download your images to a directory on your workstation.</p> <p>Be sure the images are saved in a standard file format.</p> <p>Then, follow the instructions in Section 12.2.3 for importing an image.</p>	

12.5.9 Importing an Image

To import an image, follow these steps:

Step	Action	Result
1	Select the default directory by using the Import Directory option under the Options menu.	
2	During image import, you should select the image file using the directory and file box located on the right-hand side of the VISTA Capture window.	When you have selected an image, it will appear in the image box.
3	Click on the Import Image button.	

12.6 Modifying the Image

Once an Image has been captured or imported it is displayed in the Image box on the Capture window. Use the Image manipulation buttons and slider controls to modify the image. Functions include changing Contrast, Brightness Flipping and rotating the image.

Note: Any changes made to the Image, except sizing operations, **will be saved** when 'Image OK' is clicked. Sizing operations include: Zooming, fit Width, fit Height and fit in Window.

12.7 Entering Data for the Image

- The data fields required to save an image to **VISTA** do not have to be entered before you click on the “Capture” button.
- The **VISTA** Imaging System executes a required field check when you click on the “Image OK” button.
- If any required fields are missing data, Imaging will warn you by displaying a message in the message bar at the bottom of the capture window and positioning (set focus) the cursor to the required field that has missing data.
- Depending on the specialty selected, different data fields will be required.
- The data fields required will have a white background and the user can click on the field or “tab” to the field and then enter the needed data.

12.7.1 Entering the Short Image Description (required)

- The image description will appear whenever the image is displayed.
- It should briefly (60 characters or less) describe what is clinically important about this image.
- A default image description will be provided for radiology exams.
- The user may edit the description.

12.7.2 Long Image Description (optional)

- This word processing box allows the user to enter free text.
- This text...
 - Will appear when the image is displayed and the user asks for the report.
 - May be used in teleconsultations to provide information to the reading consultant.
 - Should include pertinent information and the reason for the consultation.
- This information will be delivered to the consultant in a **VISTA** mail message and will be available at the time of the consultation by requesting the image report.
- This field may also be used for a note about the image, or a longer description of the image.

12.7.3 Study Date

Normally, the study date is automatically entered by the system. It is the date of the selected procedure, exam etc.

If 'User Defined Specialty/Category' or 'Photo ID' has been selected as the specialty, the Study Date field will be enabled, and an entry is required.

12.7.4 Study Performed

Normally, the Study performed is automatically entered by the system. It is the abbreviation of the selected procedure, exam etc.

If 'User Defined Specialty/Category' has been selected as the specialty, the Study Performed field will be enabled, and an entry is required. User can select from the dropdown list of entries or enter a free text description.

12.7.5 Objective, Stain

If Laboratory has been selected as the Study Performed, the Objective and Stain fields will be displayed. The fields are drop down list, and a selection is required.

12.7.6 Approving the Image

Assuming you have selected a patient, a specialty procedure, exam or specimen, and have entered the other required fields of data (i.e., the image description), you can now click the “Image OK” button.

To approve the image, follow these instructions:

Condition	Action	Result
When the image in the image box is acceptable...	<ul style="list-style-type: none"> Click on the “Image OK” button (Note: You must click on this button before capturing another image). 	
Depending on your workstation configuration, a window will appear confirming the image information.	<ul style="list-style-type: none"> Click on the “OK” button. Click on the “cancel” button if you need to change the configuration before approving the image. 	<ul style="list-style-type: none"> A notification that the scan/capture is completed will appear at the bottom of the VISTA capture window. The “Study Complete” button will become enabled.

12.8 Capture Window Tabbing Sequence

The tabbing sequence for the Main Capture window is: 'Patient' button, 'Select ... Procedure' button, 'Capture' button, 'short description' field, 'Image OK' button then back to the 'Capture' Button. To complete a study, press <TAB> until the 'Study Complete' button has the input focus and press enter.

The Long description is not in the tabbing sequence. Click on the long description field to enter data, or use the 'Hot Key' <ALT - L>.

Note: (the 'L' in 'Long image description' is underlined. An underlined character on a Button, Menu Option or field label is called an accelerator key. Pressing the <ALT> key and the underlined character at the same time will execute the function or set focus to the control.

- The 'Configuration Buttons' and Image manipulation button are not in the tabbing sequence. Click on these buttons with the mouse.
- The tabbing sequence changes during the capture of a Study Group.
- After the first image of a Study Group is captured, the following controls are disabled:
 - Patient button

- Select Patient menu option
- Select.... procedure button
- Specialty radio button
- 'Image saved as' radio button

These button/fields are disabled during a group capture. All images in the group refer to the same patient and procedure so the system will not let any changes to group related data until the 'Study Group' is complete. Clicking on 'Study Complete' button completes the Study.

Note: A feature of *VISTA* Imaging is the option to change the order of the edit fields and controls by selecting the menu option 'Option|Field 'Tabbing' Sequence' (See Appendix: Tabbing Sequence Window).

12.9 Repeating Image Acquisition

Condition	Action	Result
If an image capture was done incorrectly and needs to be repeated...	<p>Correct the position of the subject or the focus, if necessary.</p> <ol style="list-style-type: none"> 1. Click on the Cancel button. 2. Click the Capture button again, causing the image to be recaptured. 3. Repeat this process until you have an acceptable image. 4. Click on the “Image OK” button. 	Displays the new image in the image area.
If you selected “Image saved as a study group” on the Configuration Window ...		The <i>VISTA</i> Imaging System will display the “Study complete” button.

12.10 Indicating Completion of a Study

If your workstation is configured to save images in groups, and to indicate completion of a study, note the following:

Condition	Action	Result
When all images have been captured for a procedure...	Click the left mouse button on the “Study Complete” button.	This will create a group of images and associate them with the patient's report.

12.11 Viewing Patient’s Images

To view a patient’s images from the Capture Window, perform the following:

Action	Result
Select the option “File Latest Patient Images”.	<ul style="list-style-type: none"> The ‘Patient’s latest images’ window will be displayed. The Image list is sorted reverse chronologically by the date/time captured. Click on an entry to view the Image in the Capture window image box. Note: Capture mode is disabled when a patient’s previous images are being viewed.
Click ‘Cancel’ button	<ul style="list-style-type: none"> Enable Capture mode.

12.12 How to Disconnect a Mobile Workstation From the Network

Medical mobile stations are typically shared by a medical group for similar medical functions. Those functions can occur at several locations within a medical center (e.g., a workstation shared by several operating rooms). Medical workstations are configured to receive either video or RGB input from medical equipment.



All mobile stations will need to be disconnected from a power source and from the Ethernet network before being moved, as described in the following section.

Follow these instructions to disconnect a medical mobile station:

Mobile Workstation	Action
Medical mobile stations	<ol style="list-style-type: none">1. Shut down Windows and power-off the workstation.2. Disconnect the workstation input cable(s) at the source of the signal. These connections may have four wires:<ul style="list-style-type: none">• Red• Green• Blue• Sync (Synchronization)<p>Note: All cable(s) should stay with the workstation.</p>3. Disconnect the network cable.4. Unplug the workstation power-cord from the wall outlet.5. Reconnect above cable(s) at the new location.

Appendix A Navigation and Commands

The following conventions are used in this manual to describe the navigation and commands users perform in **VISTA** Imaging.

Convention	Description
Bold type	User Keyboard Entry
<Enter>	Enter key
Menu Option ...	This convention is used to explain a sequence of selections through a set of menus and/or options. For example, "Select Options View Preferences from the VISTA Imaging System window" would mean that : from the VISTA Imaging System window, select the Options menu, then select the View Preferences option.
Text box	<p>These are boxes into which accept keyboard input, such as the Access Code text box on the VISTA Sign-on Screen.</p>  A screenshot of a software interface showing the text "Access Code:" followed by a rectangular text input box with a vertical cursor inside.
Radio button / Check box	<p>Radio buttons and check boxes serve to enable or disable general options or preferences, such as the List Images in Reverse Order check box on the View Preferences window.</p>  A screenshot of a software interface showing a small square checkbox followed by the text "List Images in Reverse order".
<Ctrl-TAB>	Most windows in VISTA Imaging have shortcut menus, such as the Image Listing window, that are opened by holding the <Ctrl> button down and pressing the <Tab> key. Use the arrow buttons to highlight an option on the shortcut menu, and press the <Enter> key to select the option.

Appendix B Using a Mouse in the Microsoft Windows Operating System

The following information describes use of a two-button mouse with the Windows operating system. People with experience in using the Windows operating system may elect not to read this section. The term "control" refers to buttons, menus, pull-down lists, radio buttons, text-entry boxes, and other elements of a window.

Mouse button click

A mouse is a device used to point at positions on the screen. It may have one, two, or three buttons. It should be held by the end without a cord so the fingers can press the buttons. The buttons are referred to as the "**Right Mouse Button**", the "**Left Mouse Button**", and the "**Center Mouse Button**". When the mouse is rolled around on a flat surface, the arrow cursor on the screen will move correspondingly. Pressing and releasing a button is called "**clicking**". Position the arrow over a portion of the window, such as a button or scroll bar, and then click. This will cause the computer to do something such as display an image, depending on the window. When the instructions state to "press the mouse button," the instructions are referring to the **left** mouse button.

Double-click

In many cases, clicking the mouse over an object in a **VISTA** Imaging window will **select** the object, but will not perform the command assigned to that object. In these cases, double-click the object by clicking the left mouse button over the object twice in quick succession. For example, when the mouse pointer is clicked over an exam in the Radiology Exam Listing window, Imaging will select the exam, but will not display the image or image group associated with that exam. To see the image or image groups, double-click the mouse pointer over the exam associated with the image or image group that is desired.

Select

A rectangular area may be **selected** on the window. Position the arrow cursor so it is over the left upper corner of the area to be selected. Press the left mouse button down and hold it down while moving the mouse to the right lower corner of the rectangle to be selected. Release the mouse button. A dotted rectangle will appear on the window around the area selected.

Right-click

Most of the windows in **VISTA** Imaging have shortcut menus (e.g., Image Listing window) that can be seen by clicking the right mouse button with the mouse pointer somewhere over the window. Use the arrow buttons to highlight an option on the shortcut menu, and press the <Enter> key to select the option.

Drag	To move a window to another area of the screen, for example, to see something on a window that is underneath, position the cursor over the top colored title area of the window to be moved. Press the left mouse button down and move the mouse until the window is in the desired location. Release the mouse button. This is called " dragging " a window.
Drop-down menu	These are menus that display when a user clicks the mouse pointer over a menu name.
Cursor	Also called a "mouse pointer," this is the graphic that moves along the desktop in response to movement of the mouse along the mouse pad or by typing on the keyboard. The cursor changes appearance depending on what commands the user can issue at the cursor's position on the desktop, e.g., the cursor looks like an arrow over menus, like a flashing vertical bar over word-processing fields, etc.
Shortcut keys	These are single keys or keystrokes that allow users to issue commands from the keyboard that would otherwise require navigation through menus. Many shortcut keys are combinations of keys, e.g., <Alt-F4> refers to holding down one of the <Alt> keys and pressing the <F4> key.
Clipboard	A memory buffer that allows users to cut, copy and paste data and objects among Windows programs.
< >	The size of the window may be adjusted by first placing the mouse at the edge of the window to be moved. When the cursor turns into a double ended arrow < >, hold the left mouse button down and move the mouse until the image is the width and/or height desired. Release the left mouse button.

Appendix C Starting and Connecting to **VISTA** Imaging

C.1 Introduction

To use **VISTA** Imaging, the user must have an access and verify code for the **VISTA** Hospital Information System.

- **To view images**, the user must also have the **VISTA** Imaging System menu option (MAG WINDOWS).
- **To capture images**, the user must be assigned the appropriate security key.

VISTA Imaging will appear on the workstation on the **Start Menu** under **Programs** on the desktop. **Two** different user icons are available:

- An icon to display patient's multimedia medical records including images
- An icon to capture images.

C.2 Connecting to **VISTA** Imaging

Most clinical users will have access to the display program. In order to activate a program, move the mouse until the cursor is over the icon for the program, then click twice on the left mouse button. There will be a pause and then a window will open: the **VISTA** Imaging window or the **VISTA** logon window (depending on workstation setup). The user should enter an access and verify code in the **VISTA** logon window. If the user has access privileges, the **VISTA** logon window will disappear and the user will be able to use the **VISTA** Imaging System.

The **VISTA Imaging Capture Program** is started by clicking on the capture icon under **VISTA** Imaging Programs on the Start Menu. Access to the capture program is restricted to those who perform procedures with image capture capability. Users must be assigned an appropriate capture key.

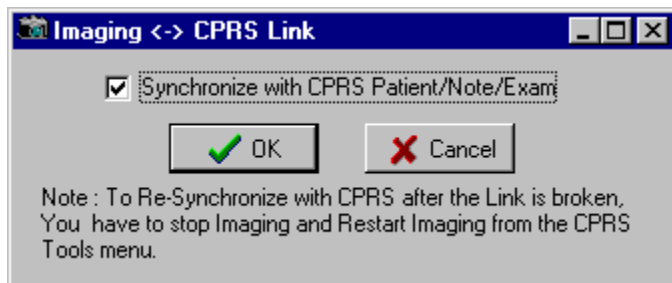
To operate the capture program, the workstation must be set up properly. This includes the correct installation of any hardware interfaces and the proper configuring of initialization files to tell the software about the type(s) of capture being performed. Further information about capture setup is included in the Imaging installation manual.

Users of **VISTA** can access the **On-Line Help** file by...

- Pressing the **<F1>** key while they are in a **VISTA** Imaging session, or...
- Pressing the **help buttons** on the **VISTA** Imaging windows.

C.3 Starting **VISTA** Imaging from CPRS

Both **VISTA** Imaging Display and Capture can be started from the CPRS menu option 'Tools'. If this option isn't available on the CPRS menu, see the System Manager.

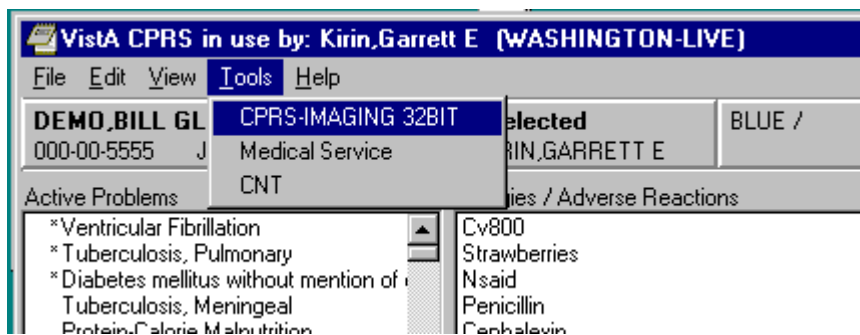


The above menu can be access from the Main **VISTA** Imaging window menu and is used to break the synchronization with CPRS. To break the link: remove the check mark and click on the OK button.

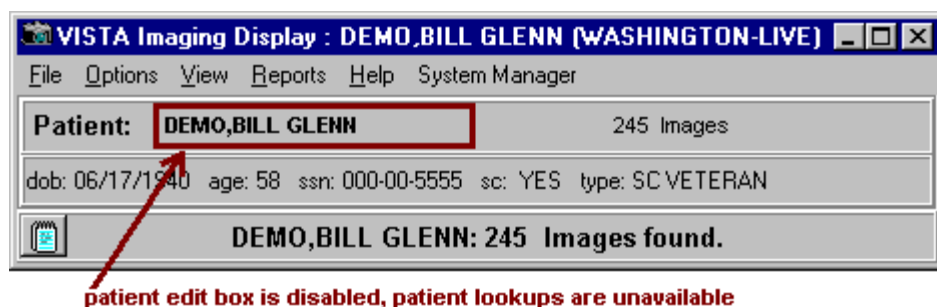
Note: To synchronize with CPRS after the Link is broken, the **VISTA** Imaging System must be closed and then restarted from the CPRS Tools menu.

C.3.1 Overview

When the **VISTA** Imaging System is started from a CPRS option, a few options are disabled that would be available if the **VISTA** Imaging System were started from the START menu (see Chapter 5).

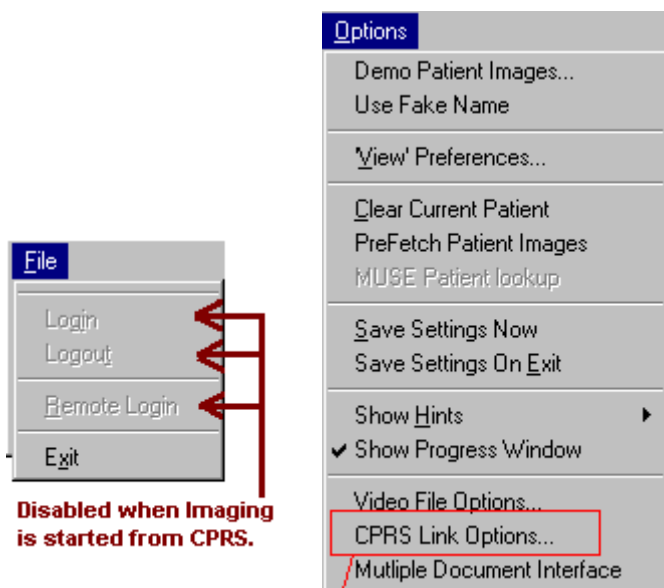


- The patient edit box, is disabled. Patient look-ups are not available.
- The 'Login', 'Logout' and 'Remote Login' menu options are disabled.



These changes are necessary so that the VISTA Imaging System and CPRS stay connected to the same Site and are viewing the same patient.

Note: similar differences occur in Imaging Capture. Patient look up, 'Login', 'Logout' and 'Remote Login' menu options are disabled.



Notes:

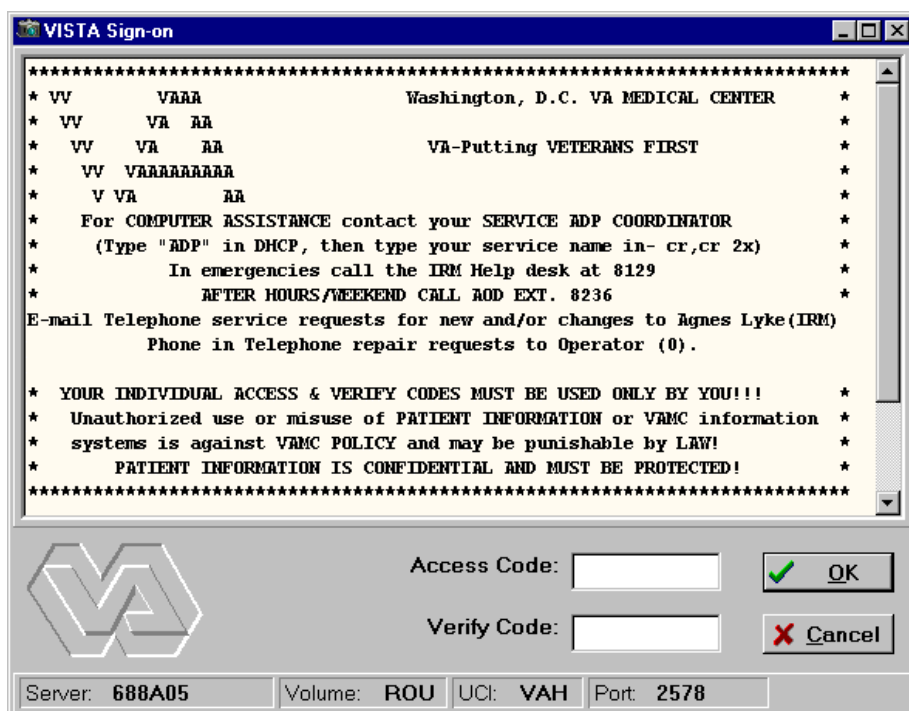
- A New menu option ('CPRS Link Options') is available on the 'Options' menu in both Imaging Display and Imaging Capture when the VISTA Imaging System is started from CPRS.
- The 'CPRS Link Options' will Open the 'Imaging <-> CPRS Link' window.
- The CheckBox 'Synchronize with CPRS Patient /Note/Exam' will be checked when Imaging is started from the CPRS Tools menu. Whenever the selected patient is changed in CPRS, Imaging will automatically change to the new patient.

- Whenever a Progress Note or Radiology Exam is selected in CPRS, any associated images will be displayed in the Imaging Group Abstract window.
- When synchronized with CPRS, Patient look up, Login, Logout, Remote Login are disabled in the Imaging Menus.
- To enable the patient edit box, the 'Login', 'Logout' and 'Remote Login ' options, The Synchronize check box must be unchecked. This will enable the Imaging user to connect to a different site and look up a different patient than is being viewed in CPRS.

C.3.2 The **VISTA** Sign-on Window

When **VISTA** Imaging is started and no other **VISTA** application is running on the workstations, the **VISTA** Signon Window will appear. The user will be prompted to perform the following:

1. Enter Access code into the Access Code input field.
2. Press <Tab> and enter the Verify Code into the Verify Code input field.
3. Click on “OK” button or press <Tab> to move to the 'OK” button and press <Enter>.



Access Code:

Use the Access Code text box to enter your access code.

Access Codes are set by the Information Resources Management (IRM) Service at your site.

Verify Code:

Use the Verify Code text box to enter your verify code.

Verify codes are originally assigned by the Information Resources Management (IRM) Service at your site, but you must change your verify code periodically by logging onto the **VISTA** System directly.



Press the OK button after you have entered your access and verify codes.



Press the Cancel button if you cannot or do not wish to sign onto **VISTA**.

Appendix D Supplementary Functions

D.1 Placing the Workstation

The workstation can be installed on a desk, modular shelving or mobile cart. The PC and monitor should be connected to an electrical surge protection device. The entire system should be physically secured to prevent loss (including prevention of access to internal parts).

The workstation should not be installed near heat sources, magnetic fields or liquids. The PC will require periodic maintenance (i.e. removal of accumulated dust and dirt).

Imaging workstations can also attach to image input accessories, such as scanners, video cameras and microscopes. The workstation storage area should provide protection and support for these accessories.

The imaging support staff should meet with the medical staff who will be using the workstation to determine the best location for the workstation. Many issues should be considered before selecting a location, such as mobility of the workstation and its distance from other equipment. Locating an imaging workstation can be a challenge, especially when a workstation is in an operating room or other location that provides acute care.

The basic imaging workstation usually consists of a Pentium PC running the Windows NT operating system. The monitor screen should be at least 17 diagonal inches and capable of displaying the resolution required for image display. The minimum resolution should be 1024 x 768 pixels with 16 million colors. All Windows workstations use a mouse, track ball, or digital pad to allow users to issue commands and navigate through applications.

D.2 How to Connect and Disconnect a Workstation from the Network

There are two types of mobile workstations: medical mobile stations and stations used for support personnel or for presentations. All mobile stations will need to be connected and disconnected from a power source and from the Ethernet network.

Medical mobile stations are usually used by a medical group for similar medical functions. Those functions can occur at several locations within a medical center. Medical workstations are configured to receive either video or RGB input from medical equipment and include both the Imaging PC system and additional hardware required to translate signals among formats, e.g., RGB to video. The user needs to connect and disconnect the workstation from the source of the signal. These connections usually have four wires: Red, Green, Blue, and Sync (Synchronization).

Stations used for support personnel or for presentations are equipped with the Imaging PC system and various devices that connect to medical equipment and image projectors, such as LCD overhead projectors. These stations include accessories to translate the image output from the imaging PC to various display media. The user needs to connect and disconnect the Imaging PC to the projection media. The user may also need to connect a conversion unit between the

Imaging PC and the projection media to translate the signal from the Imaging PC into a format that the projection media can interpret.

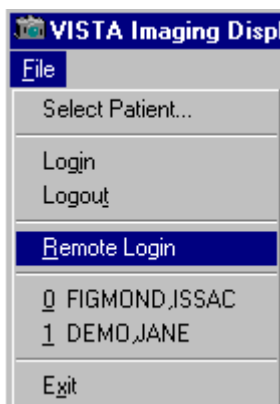
Appendix E Viewing Medical Information Remotely

E.1 Introduction

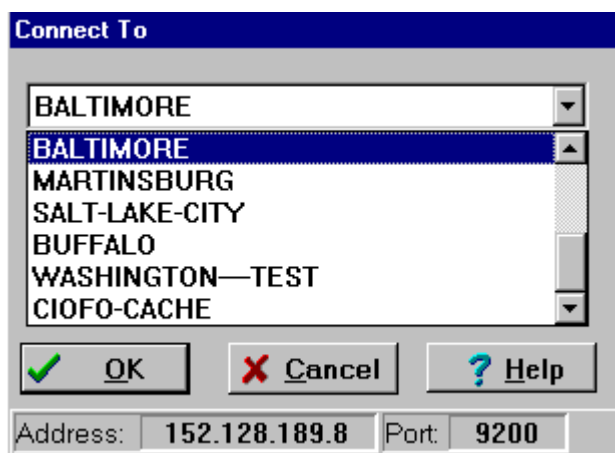
A user with access privileges to an Imaging System at another VA facility may view a patient's records from that site across the VA's wide area network. It may also be possible to dial into the VISTA Imaging System via modem, depending on the site's configuration.

E.2 Connecting to a Remote Imaging System

1. To connect to a Remote site, select the menu option 'File | Remote login'.



The 'Connect to' window will be displayed.



2. Select the name of the VA system to be accessed from the pull down list. Click OK and then enter the access and verify codes for the remote VA system.

The workstation can be configured so that the 'Connect to' window will be the first window to appear when the **VISTA** Imaging System is started. Contact your system manager to have that functionality enabled.

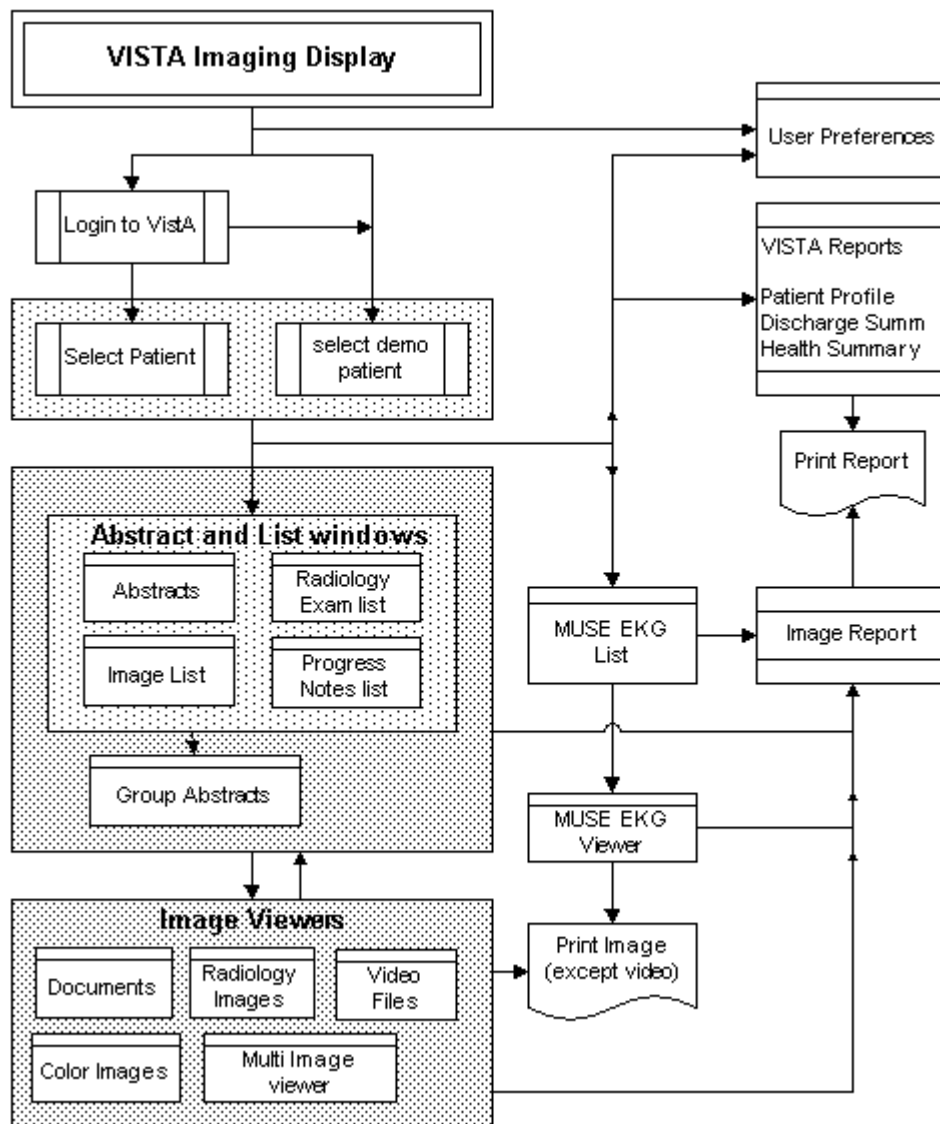
E.3 Using Imaging Software Remotely

- Operation of the **VISTA** Imaging software will be the same as when connecting to the local site.
- Images may be displayed or captured remotely.
- The image listing window can be used instead of the abstract view window to speed up operation.
- However, the abstracts will be displayed in a few seconds even over the VA's wide area network allowing ad hoc selection of images for viewing.

Appendix F Flowchart of **VISTA** Imaging Display

This Appendix explains how the windows in Imaging Display windows relate to each other in terms of what windows can be accessed directly from a command in another window.

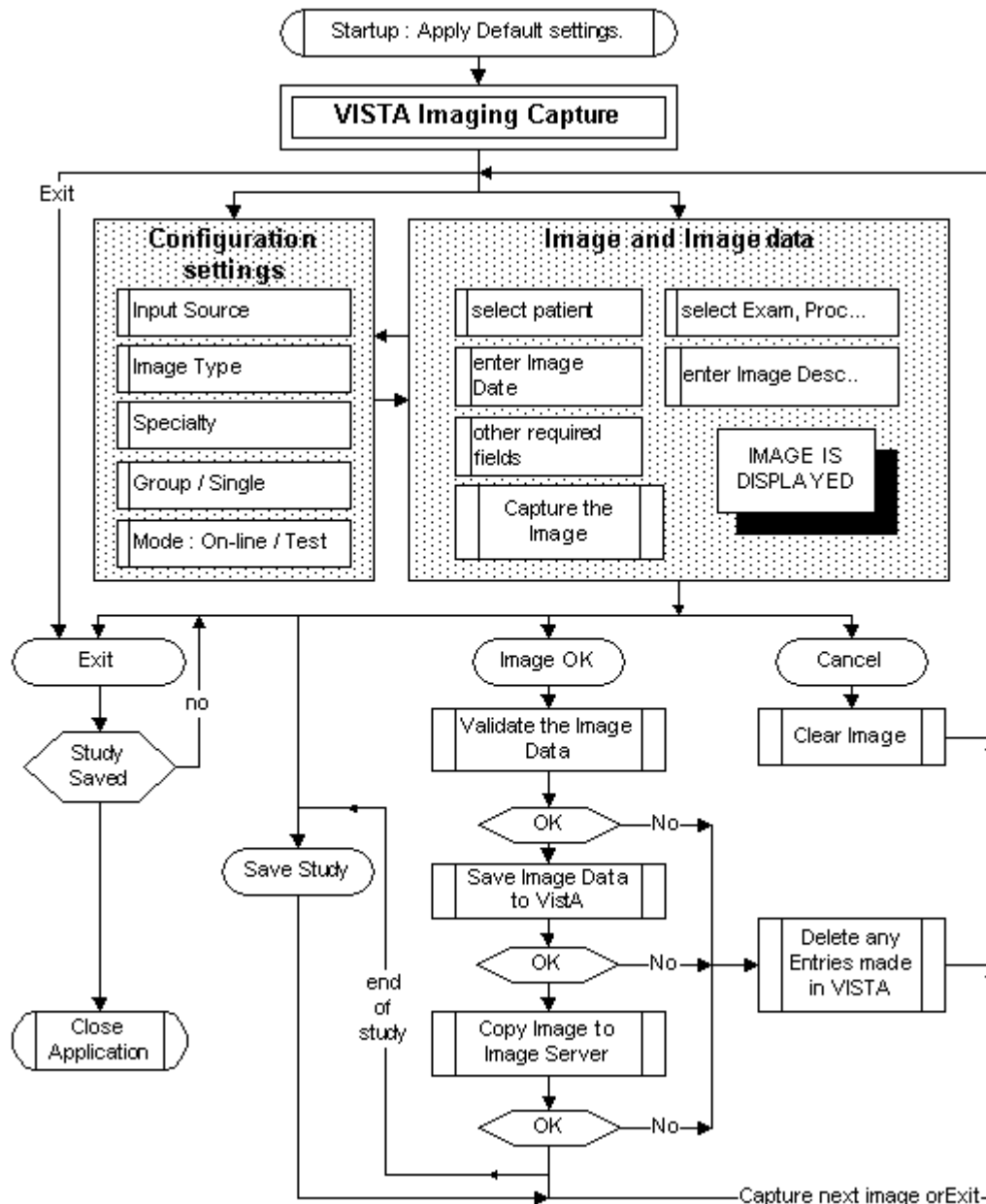
VISTA Imaging Display windows



Appendix G Flowchart of Imaging Capture

This Appendix explains how the windows in **VISTA** Imaging Capture windows relate to each other in terms of what windows can be accessed directly from a command in another window.

VISTA Imaging Capture windows



Appendix H **VISTA** Imaging Capture: Window Descriptions

H.1 **VISTA** Imaging Capture Window

The **VISTA** Imaging Capture window is the main window for capturing images to the patient record.

Other windows will be opened during the capture process to select, confirm or edit the information required to capture an image to the patient record.

VISTA Imaging Capture : DEMO,JANE (WASHISC) in use by: KIRIN,GARRETT E

File Options Configurations Help

Source: Import Type: TIFF G3 FAX Specialty: No Specialty Saving: Study Mode: OnLine Other: Copy to Server

Import Med Group PHOTO ID Import Category Import Rad Import Rad Study Single Note Meteor JPG, single

Select Patient

DEMO,JANE 459-88-7777

Study Performed ENCOUNTER FORM

Study Date Dec 04, 1998

Image Description (text for image description)

Capture Batch

Image OK Cancel Study Complete

Long Image Description (optional): ☒ word wrap

(word processing field for Image Long description)

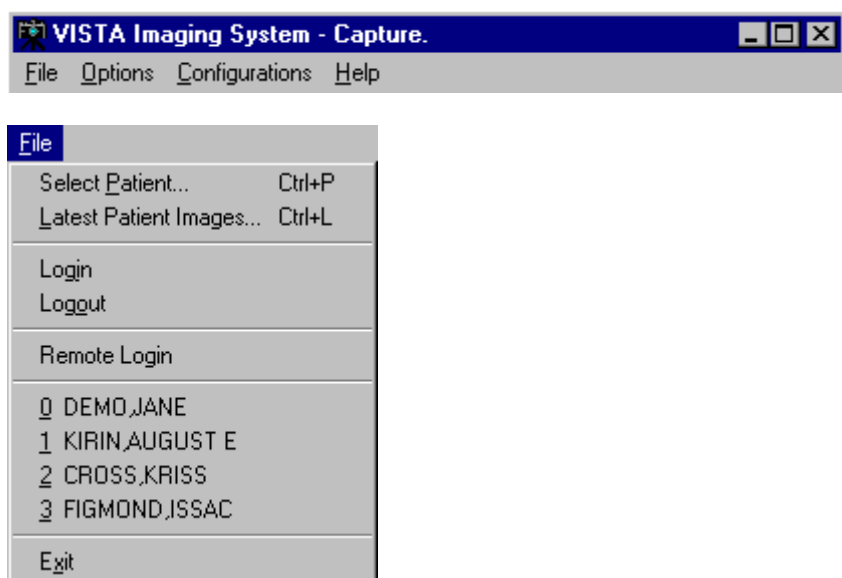
D:\JPEGs

Name	Size	Type	Modified
SCN.TIF	489KB	.TIF	01/09/1998 3:55 pm

Click 'Capture' or press '<return>' to capture the Image.

See Also: Adding Images to Patient Records and Flowchart of Imaging Capture, to get an overall view of the Image capture process.

H.1.1 *VISTA* Imaging Capture Window: Menu Options



- "Select Patient..." opens the Patient Look Up window to select a Patient.
- "Latest Patient Images..." opens the "Patient's latest Images" window. A list of the latest or all images for the current patient can be displayed.
- "Login" opens the *VISTA* Sign on window. Access and Verify codes are required to connect to *VISTA*.

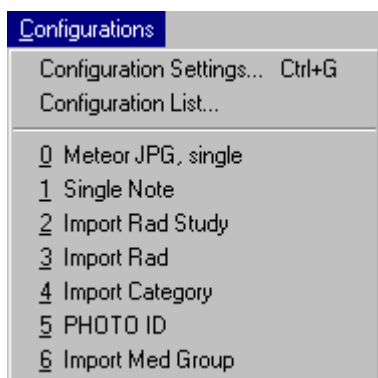
Note: If a connection to *VISTA* exists, a confirmation to disconnect will be necessary before connecting to another *VISTA* System.

- "Logout" will disconnect the Imaging System from *VISTA*.
- The Login option can be used to Login as a different user.
- "Remote Login" will open the *VISTA* Server list. Remote *VISTA* sites can be selected from this list.
- **Note:** The *VISTA* Server list can be opened when the *VISTA* Imaging System starts. Contact the System Manager to modify the Workstation configuration settings.
- 0...9 entries: are the 10 most recent patients accessed during this capture session.
- "Exit" will disconnect the Imaging System from *VISTA* and close the *VISTA* Imaging System.

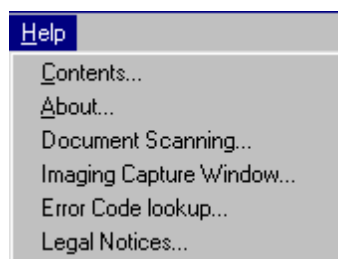


- **"Import Directory..."** opens the Import Directory selection window to select the directory of images to import.
- **"Field 'Tabbing' Sequence..."** opens the Tabbing Sequence Window. The position and tabbing order of the capture controls can be changed.
- **"Batch Capture Options..."** will be enabled if 'Import' is the input device. Options that apply to the Batch Capture of images are set in the Batch Capture Options window.
- **"Video File Options..."** opens the Video File Options window. The Video File Viewer can be selected.
- **Note:** In VISTA Imaging only .AVI files can be captured.
- **"CPRS Link Options..."** will be visible if Imaging Capture was started from the CPRS 'Tools' menu. Selecting this option opens the Imaging <-> CPRS Link window. The link between CPRS and Imaging can be disabled (broken).
- **"Save Image As..."** is available only in 'Test mode'. It allows users to capture images from an input device and save to the local hard drive. The 'Save As...' dialog box will be opened for the user to enter a file name.
- The **"Multi-Page Tools..."** option will open a small tool window with paging, controls.
- If the **"Show Hints"** option is checked, short hints will display when the cursor is positioned over a control in any of the Imaging Capture windows.
- If the **"Show Confirmation messages"** option is checked, dialog windows will interrupt the capture process requiring confirmation of certain operations. An example is the 'confirmation window', where the 'OK' button must be clicked in order for the process to proceed. This option should be checked for new users of the Imaging Capture System.

- If the **"Saved Configuration Toolbar"** option is checked, the Capture window tool bar will be visible and display the saved configurations as buttons.
- If the **"Current Settings Toolbar"** is checked, the current settings will be displayed at the top of the Capture Window. <Click> on a setting button to quickly change that setting only.
- The **"Large Slider Controls"** option will increase/decrease the size of the Brightness, Contrast, and Zoom slider controls.

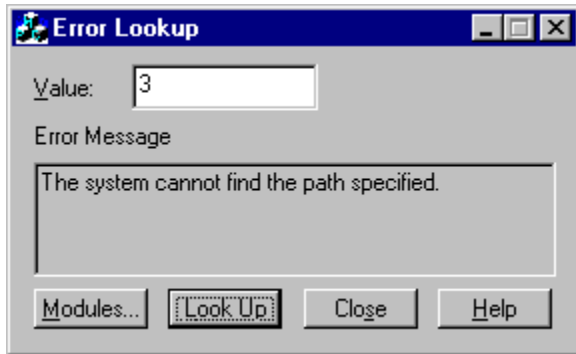


- **"Configuration Settings..."** opens the Configuration settings window where the Input Type (or Source), Image Type and other Imaging Capture settings can be changed.
- **"Configuration List..."** opens the Configurations window where capture configurations can be edited, deleted, and created.
- **"0...n"** options will be displayed. One for each saved configuration.



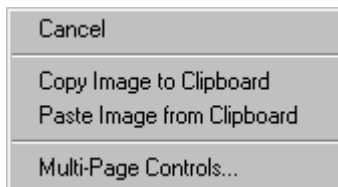
- **"Contents"** will open the contents page of On-Line help for *VISTA* Imaging.
- **"About"** will display *VISTA* Imaging version information.
 - **"Document Scanning..."** option displays information on how to scan and index documents into the *VISTA* Imaging system.
- **"Imaging Capture Window"** will open the Imaging Capture Window page of On-Line help.

- **"Error Code Lookup..."** will open the 'Error Lookup' window. A short description will be displayed for the error code entered.
- **"Legal Notices..."** option displays copyright and FDA notice information



H.1.2 **VISTA** Imaging Capture Window: Short Cut Menu

Position the mouse over the Image Box of the capture window and <right-Click> to get the Shortcut menu.

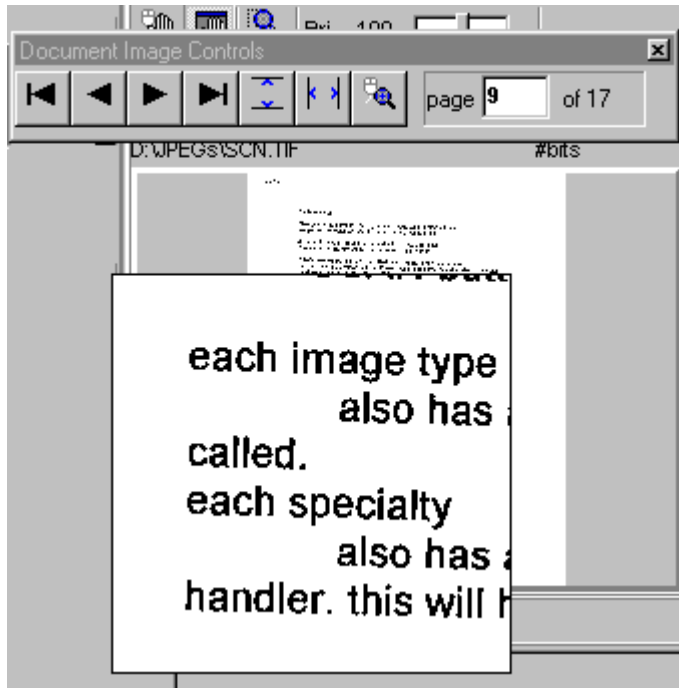


- **Cancel** cancels the current Image, clears the Image Box.
- **Copy Image to Clipboard** copies the Image to the Clipboard.
- **Paste Image from Clipboard** pastes the Image from the Clipboard into the Image Box.
- **Multi-Page Controls** opens the Image Controls Toolbar window.

H.1.3 VISTA Imaging Capture Window: Image Controls

The Document Image Controls window provides further options to manipulate the Image for easier viewing of Documents, Multi-Page documents or any image.

(The graphic is a cutout area of the Capture Window after selecting Image Controls... from the shortcut menu.)



The controls apply to the Image displayed in the Image Box.



For Multi page documents: Goto First Page, Previous Page, Next Page, Last Page. A specific page number can also be entered in the 'page' edit box (see graphic above).



Fit the Image to the Height or Width of the Image Box.



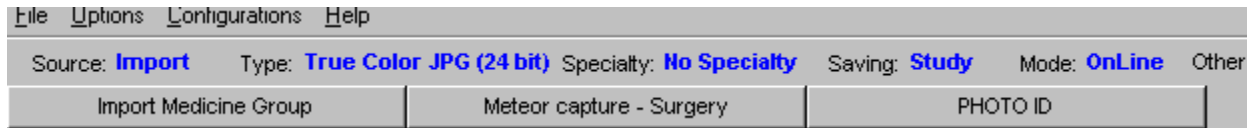
The mouse acts like a magnifying glass. Position the mouse over the image and <left-Click> to open the magnifier (see graphic above).

H.2 Description of the different areas of the VISTA Imaging Capture Window

H.2.1 Configuration settings displayed

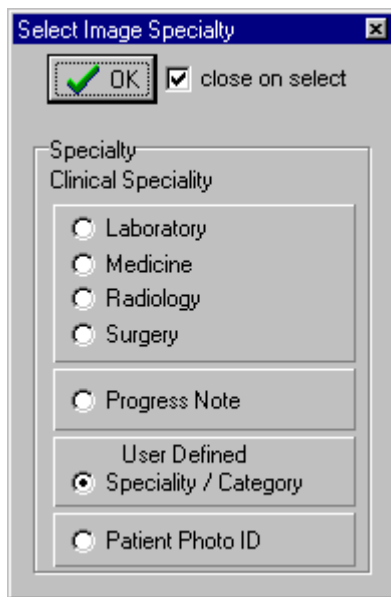
At the top of the VISTA Imaging System - Capture window, the current configuration settings are displayed for: Input source, Image Type, Specialty, Image saved as, Input Mode and Other.

('Other' field displays information relating to the selected Input Type.)



The settings can be changed by...

- The Imaging Workstation configuration window.
- The Configuration Listing window to create a new Configuration button.
- Clicking on a previously defined Configuration button.
- Clicking the setting name on the configurations display to change a single setting. A window will open to allow changing that setting.



For Example: Click on the 'Specialty' button -- the following window will display. The specialty can be quickly changed.

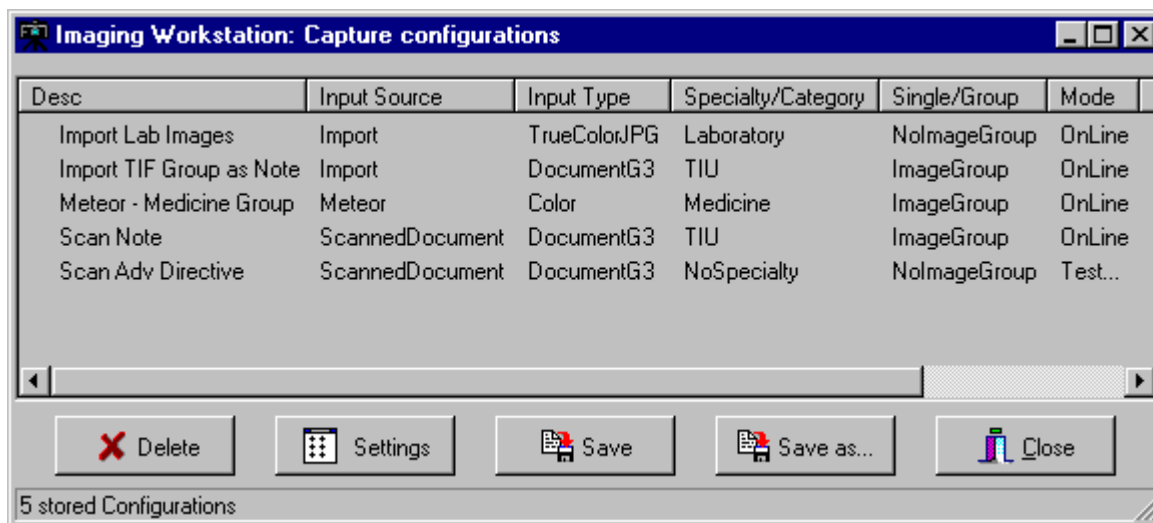
Note: If the configuration window is already open when a Setting button is clicked, it will become the top window.

H.2.2 Configuration Buttons

H.2.2.1 Configuration Buttons List

The VISTA Imaging System encompasses a way to quickly change to different settings. Select the 'Options|Configuration List' menu option from the main capture window to open the 'Imaging Workstation' Capture configurations window.

Note: All configurations defined, will be displayed on the Configuration tool bar in the Main Capture Window.



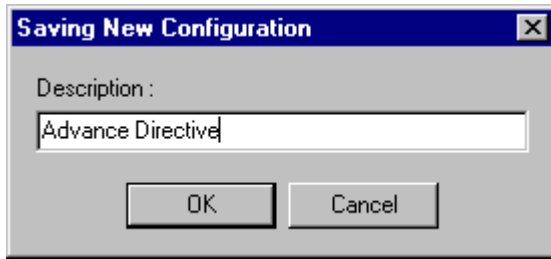
If a workstation has more than one Input Source and switching between them is common, or...

- This workstation switches between Specialties
- It is common to switch between film sizes of the Lumisys scanner
- It is common to switch between any settings

...Then, Configuration Buttons will enable one-click settings changes.

H.2.2.2 Creating 'Configuration Buttons'

1. Open the 'Configuration Settings' window by clicking on the 'Settings' button.
2. Select the appropriate settings for Input Source, Specialty etc.
3. Click on Save As to open the New Configuration window.



4. Enter a description of the configuration and click 'OK'.

The settings will be saved, and then displayed in the list.

5. Change the settings and repeat creating 'Configuration Buttons' until the common configurations used on the workstation have been defined as 'Configuration Buttons'.

H.2.2.3 Deleting 'Configuration Buttons'

Click on an entry in the 'Configuration Buttons' listing, Click on 'Delete'.

H.2.2.4 Modifying a Saved Setting

Select a list entry, change any settings in the Configuration Settings window, then click the 'Save' button. The list entry will be deleted, and appended at the bottom of the configuration list.

H.2.2.5 Using 'Configuration Buttons'

All 'Configuration Buttons' defined will be displayed on the Tool Bar in the Main Capture window. When a 'Configuration Button' is clicked, the configuration settings will change to reflect the settings of the saved configuration.

Note: When an entry in the list is selected, the settings in the Configuration Settings window and the Imaging Capture window will change to the selected configuration.

H.2.3 Input Data Fields

(Capture Window Input Data Fields)

Note: Graphic is a cutout of the VISTA Imaging Capture window.

If a Patient Photo ID is on file, it will be displayed to the left of the Patient Name.

The Input data fields include Patient, ID, Study Performed, Study Date, Image Description plus others that vary depending on the Specialty that the user selects. The data is saved to the **VISTA** Image File when an image is captured.

The **VISTA** Imaging System fills the fields with a gray background when the user makes selections. For instance, when a patient is selected, the patient name and the patient SSN are placed in those fields.

Notes:

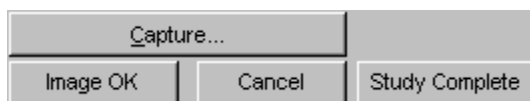
- The **VISTA** Imaging Capture window is designed for a screen resolution of 1024x768. Lower resolutions may require the user to scroll through the window.
- The input data fields are in a scrolling region. From some Specialties, a scroll bar will become visible to enable data input.
- If the **VISTA** Imaging Capture window is resized, a scroll bar may become visible.
- Pressing the <TAB> to move from field to field can be used as an alternative to scrolling. The area will scroll automatically so that the current input field will be in the visible area.

H.2.4 Image Function Buttons

(Capture Window: Image function buttons)

These buttons are used during the capturing of a patient image.

Note: Click on area of graphic for help on specific buttons.



The 'Image function buttons' consist of...

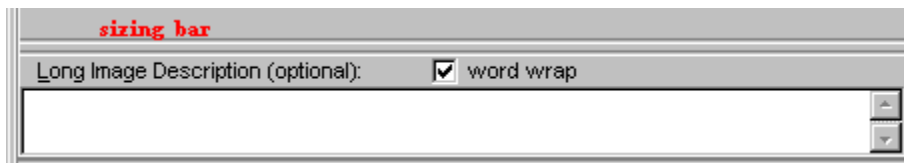
- **Capture** activates the Input device to Capture (Acquire) the image.
- **Image OK** indicates approval of the captured image.
- **Cancel** discards the captured image.
- **Study Complete** indicates that all images have been captured for the Study.

Note: Opening the 'Tabbing Sequence Window' can change the position of the buttons and their tabbing sequence.

H.2.5 Long Image Description field

(Capture Window, Long Image Description)

Entry of a long image description is optional. Type any description in the scroll box provided. Long image descriptions are displayed as the first paragraph of Image Reports.



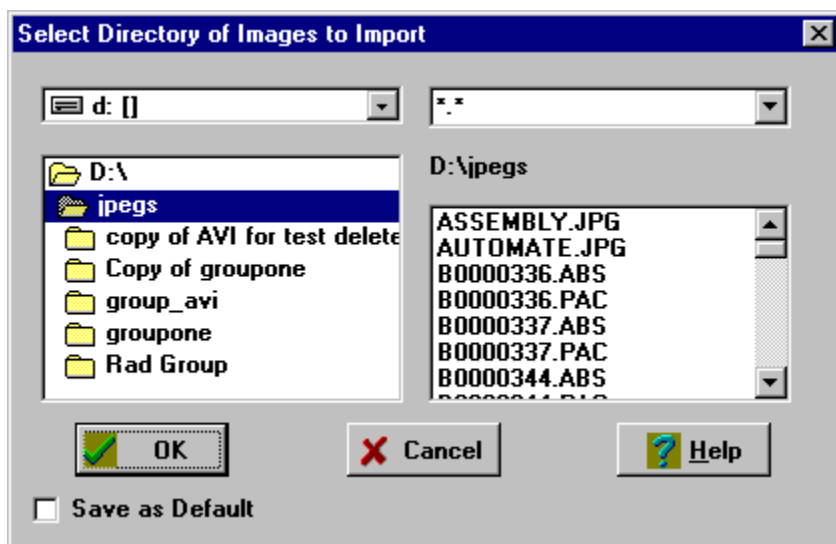
Note: The mouse can be used to 'drag' the 'Long Description' field and make it smaller/larger for easier input of data. Position the mouse over the sizing bar above the 'Long Description' text and when the mouse changes to the horizontal crossbeams click down with the left mouse button and move the cursor to a new position for the top of the long description field then release the mouse button.

- Word wrap can be turned on/off.
- Paragraph indents and formatting will be saved.
- <right-click> with the mouse to display the shortcut edit menu.
- Available options are: Undo,Cut,Copy,Paste>Delete,Select All.
- The Long Description field also has a minimum and maximum height and the system won't let the user size the field beyond them.

H.2.6 Import Directory

VISTA Imaging Capture is in 'Import Mode' when 'Import' has been selected as the Input Source. In Import Mode, the directory of images to be imported must be identified.

1. Open the 'Select Directory of Images' window by...
 - Selecting the menu option 'Options|Import Directory', or...
 - Click on the Import directory that is displayed, or...
 - <right click> on the Import directory file list
2. Select the Drive, Directory and file mask (*.TIF). The images in that directory matching the mask will be displayed in the file list box. (see Note)
3. Click the 'OK' button and the image files will be redisplayed in the Import directory file list box on the Main Capture window.



Notes:

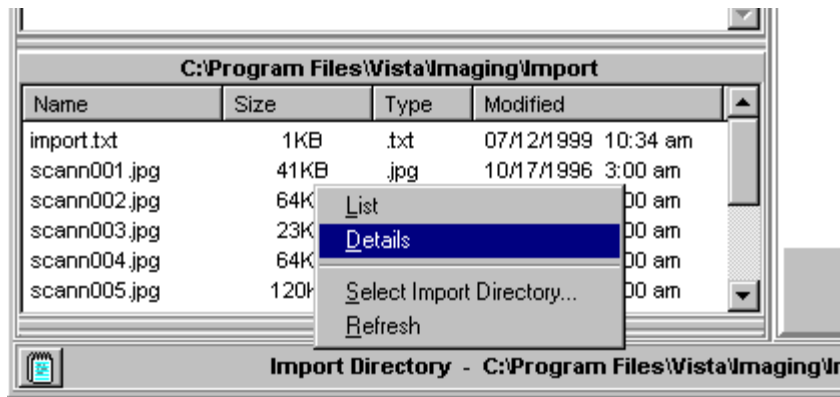
- The images displayed in the file list box in this window are for display purposes only. Images aren't selected from this window, just the directory.
- If 'Save as default' is checked, the Drive, Directory, and file mask will be saved by the system and used as defaults the next time this window is opened.
- File mask or file filters are used to limit which files will be displayed in the file list box. the most familiar mask is '*. *'. This will display all files. Alternate masks can be typed, or selected from the list.

H.2.7 Import Directory File Listing

(Capture Window - Select Image File to be Imported)

If 'Import' is the Input Source and an Import directory has been selected, the list of images in the selected directory is displayed in the Import directory file listing on the main Capture Window.

Note: The graphic is a clipped area of Imaging Capture window.

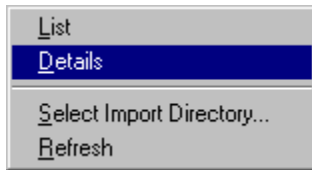


A file can be selected by Clicking on an entry or using the keyboard arrow keys to select the next or previous image. Selecting a file causes it to be displayed in the image box.

Notes:

- 'Browse' the images by selecting the next image in the list until the desired image is found. The image displayed in the image box, is not captured until the 'Capture' button is clicked. Once captured, the image list and browsing capability are disabled until either 'Image OK' or 'Cancel' have been clicked.
- The disabling of the import directory after an image has been captured is a safeguard against clicking a different image by mistake and saving the wrong image to the patient file. To enable the Import directory file list click the 'Cancel' button.
- If a Study Group is being captured, the Batch Capture option is available to capture multiple images at one time.

<right click> with the mouse to open the shortcut menu.



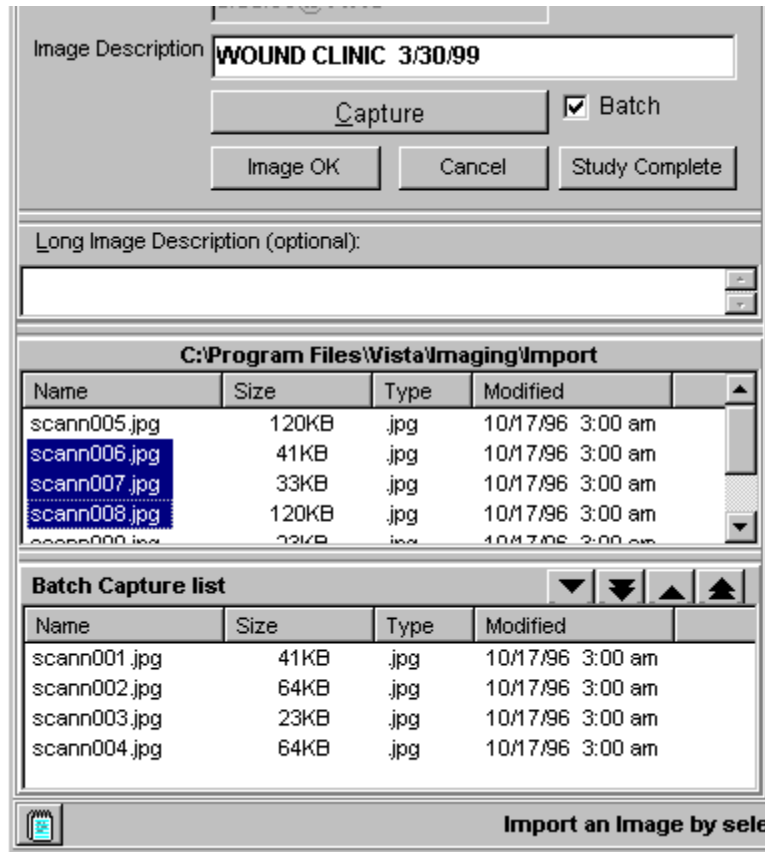
- **'List'** - Only File names are displayed.
- **'Details'** - File Names, size, type and date modified are displayed.
- **'Select Import Directory'** - Select a directory of images to import.
- **'Refresh'** - Refresh the current directory list.

H.2.8 Import an Image: Batch Option

If 'Import' is the Input Source and images are being captured to a Study Group, Batch capturing will be available.

When 'Image OK' is clicked, Batch capturing provides the option of selecting multiple images from an import directory and having them all saved to an Image Group at once.

Note: The graphic is a clipped area of Imaging Capture window.



- When the Batch option ☒ Batch is checked, the Batch Capture list will be displayed directly beneath the Import file list.
- To capture a batch, simply move the desired image files from the Import directory list into the Batch capture list, click the 'Capture' button then click the 'Image OK' button.
- Images can be moved by dragging selected images from one list to the other.
- Images can also be moved by selecting an image or images, and clicking on the appropriate transfer button.
- The Batch Capture Options can be changed at any time during the Imaging Capture session. (see Appendix : Batch Capture Options Window)

Note: The 'view' of the image files can be switched in either list to 'List view' or 'Detail view' by clicking the right mouse button to open a shortcut menu and selecting the 'view'.

H.2.9 Image Manipulation Buttons

(Capture Window: Image Manipulation buttons)



- The right side of the window under the Tool Bar has the Image manipulation buttons and the image box.
- When an image is captured, it is displayed in the Image Box.

CAUTION: Any changes made to the Image (except sizing operations) will be saved when 'Image OK' is clicked. Sizing operations include...

- Zooming
- Fit Width
- Fit Height
- Fit In Window

H.2.9.1 Button Descriptions



Reset the Image to its original orientation, contrast, and brightness (This does not reload the image from disk; to do that during Import, simply click again on the image in the Import directory listing).



Fit the Image into the Image box.



Invert all the colors in an Image.



Flip Image Horizontally.



Flip Image Vertically.



Rotate - 90 degrees.



Rotate 90 degrees.



Position the mouse over the Image, and drag (pan) the visible area of a zoomed image.



Open a Pan Window. Use the mouse in the pan window to move the visible area of a zoomed Image.



Drag a selection rectangle over the image; the image will be zoomed to the selected area.

H.2.10 Image Box

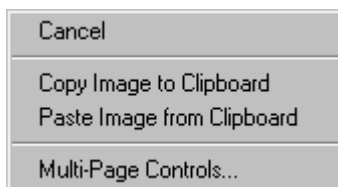
The main function of the Image Box is to display images that have been 'Captured'.

Once an Image has been captured...

1. Click 'Image OK' to save the image to **VISTA**, or...
2. Click 'Cancel' to discard the image.

Note: When an image has been captured successfully, the Image Box will appear 'raised'.

- The Image Box also can be used to display a patient's previously captured images.
- Selecting the menu option 'File|Latest patient Images' will open the 'Patient's latest Images window'. Selecting an item from the list will display the image in the image box.
- While displaying patient images in this manner, the Capture, Image OK, and Study Complete buttons are disabled, Only the Cancel button is enabled. The 'Cancel' button must be clicked to enable Image Capture again.
- The Image Box can also act as an Image Browser by selecting 'Import' as the 'Input source' and then scrolling through the Import directory file listing. As each image name is selected, it will be displayed in the Image Box.
- To get the Image Box shortcut menu, position the mouse over the Image Box of the capture window and <right-click>.




- **Cancel** cancels the current Image, clears the Image Box.
- **Copy Image to Clipboard** copies the Image to the Clipboard.
- **Paste Image from Clipboard** pastes the Image from the Clipboard into the Image Box.
- **Multi-Page Controls** opens the Image Controls Toolbar window.

H.2.11 Message / Status bar

At the bottom of the capture window is the message / status bar.

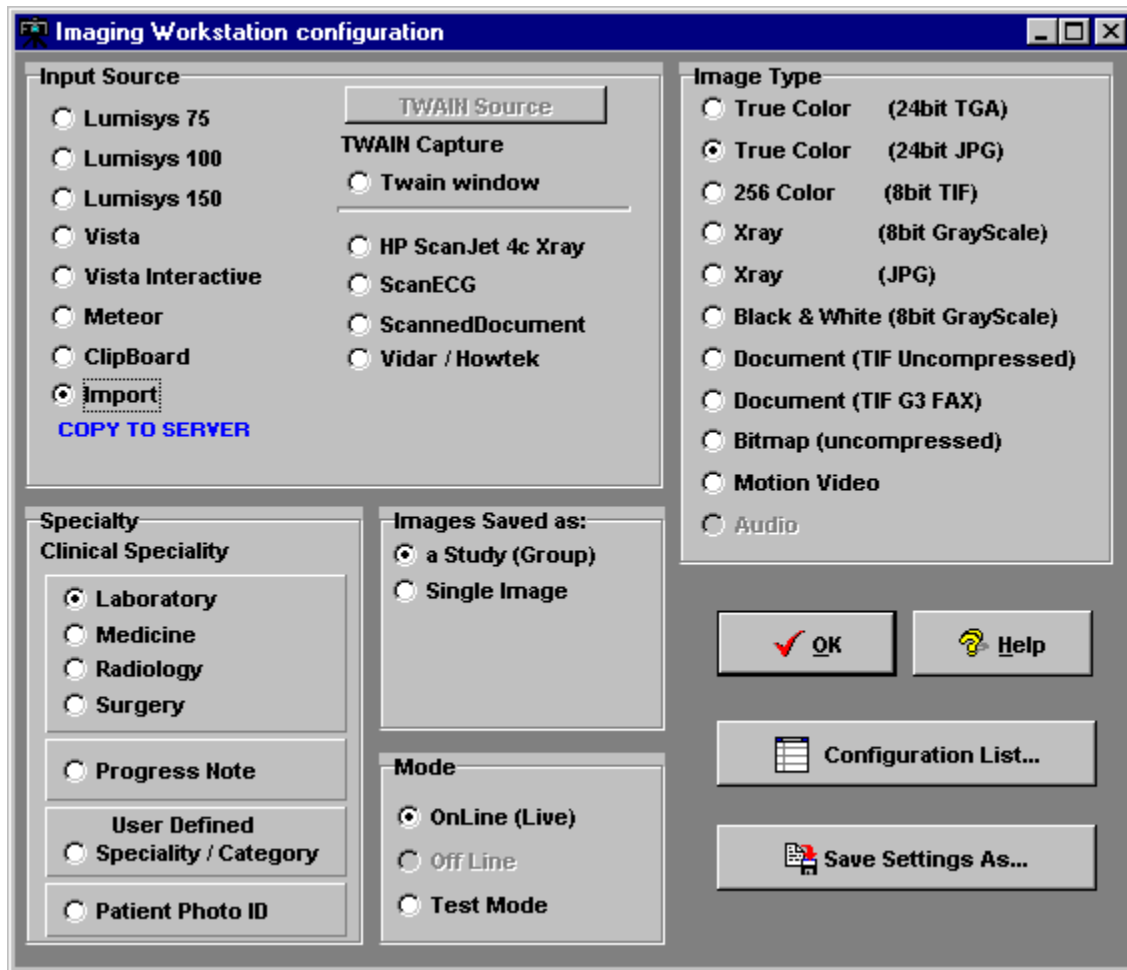


During the capture process, messages and a progress indicator will be displayed. Click on the message history button.  to open the message history window and view the previous 200 messages.

H.3 Capture Configuration Window

From the Main Capture window, select the menu option 'Options|Configuration' to open the Configuration window.

- Some controls on this window will be disabled due to the initial IRM workstation configuration.
- Settings for Input Source, Image Type, Specialty, Mode, and 'Image saved as:' can be changed from this window.
- The current settings can be saved as a new configuration by clicking on the 'Save Settings As. ' button.
- The 'Configuration List' button will open the 'Configuration List' window. Capture configurations can be created, modified, and deleted.



Note: Changes take effect immediately. The current settings are displayed at the top of the main Capture window in blue text.

H.3.1 Capture Configuration: Input source

The Input Source identifies the type of Capture device being configured. It may be any of the following:

- Lumisys x-ray scanner, model 75, 100, 150 or 200, which produces a 1K x 1K x 8-bit gray scale image and optionally a 2K x 2K x 12-bit diagnostic quality gray scale image
- Truevision AT VISTA image capture board which produces a 24-bit color or 8-bit black and white image from RGB NTSC input
- Matrox Meteor image capture board which produces a 24-bit color or 8-bit black and white image from RGB, S-Video, or Composite NTSC inputs

- Image Import from the local disk or a network drive
- Standard TWAIN device such as a color, xray, or document scanner or a still video camera; these may produce a 1-bit or 8-bit black and white image or a 8-bit or 24-bit color image (in the future, 12-bit 2K x 2K diagnostic quality xray images will be supported)
- Customized TWAIN source called HP ScanJet 4c xray which produces an 8-bit gray scale 8.5*11 image.
- Customized TWAIN source called ScanECG which produces a 256 color scan at 100x100 dpi
- Customized TWAIN source called Scanned Document which produces a 1-bit 200x200 dpi document (FAX quality)
- Customized TWAIN source called Vidar/Howtek which produces a Xray, Black and White or Document (TIF uncompressed)

H.3.1.1 TWAIN

- Clicking on the "TWAIN Source" button displays a list of all TWAIN sources connected to the workstation.
- If only one TWAIN Source is connected to the workstation (which is usually the case)...
 - It will be automatically selected.
 - No list will be displayed if the button is selected.
- If TWAIN Capture - TWAIN Window has been selected as the Input Source, another window will be opened when 'Capture' is clicked. This is the TWAIN Window for the TWAIN device. Each TWAIN Device has its own TWAIN Window and TWAIN Image Types. In the TWAIN Window, image type and other image parameters will need to be selected.
- Be sure that the image type selected for the *VISTA* Image Capture corresponds to the image type selected on the TWAIN window. Depending on the equipment manufacturer, different TWAIN Image Types may be listed., and not all vendors support all of these image types.

H.3.1.2 Changing Image Types

When changing an Input Source on the Configuration Window, the Image Types that are grayed-out (disabled) will also change. The Imaging System knows which Image Types are applicable to each Input Source and will enable-disable Image Types as appropriate.

H.3.1.3 Disabled Selections

Because of the complexity of multiple Image Types and Input Sources, there might be a situation where all Image Types are disabled. If this situation occurs, contact the System Manager.

H.3.2 Capture Configuration: Image Type

(Summary of available Image Types)

The Image Type is used to indicate the type of image resulting from the capture process.

Possible types include...

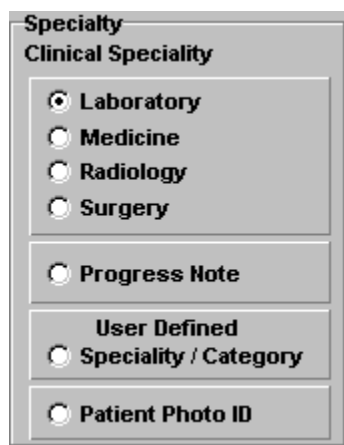
Image Type	Resolution
True Color TGA	24-bit image AT-VISTA board produces 768x486
True Color JPG	Meteor produces 640x480 pixels TWAIN produces a variety of resolutions
256 color	8-bit color image variable spatial resolution depending on source
X-ray	8 or 12-bit grayscale image
X-ray (JPG)	8-bit grayscale JPG image.
Black and White	8-bit grayscale image 768x486 or 640x480
Document(TIF uncompressed)	1-bit TIF 200x200 dpi (or other resolution)
Document (TIF G3 FAX)	1-bit compressed TIF 200x200 dpi, 1728x____ image
Motion Video	AVI motion video file
Audio	WAV file

X-ray is used for scanned x-ray films of any sort. This includes Lumisys and Vidar scanners. It may also be used for other black and white images where exact manipulation of the gray scale is necessary. Black and White is used for ultrasound, cardiac catheterization, pathology fluorescent stains, for example. Color should be used for all color captures; this includes an AT- **VISTA** board, Meteor board, TWAIN color sources, and color imports. The Document type is for 1 bit scanned documents. The EKG, motion video, and audio types are not yet available, but are expected shortly.

Note: Because of the complexity of multiple Image Types and Input Sources, there might be a situation where all Image Types are disabled. If this situation occurs contact the System Manager.

H.3.3 Capture Configuration: Specialty

From the Configuration Window, select the specialty to associate with capturing images. Choices include...



The screenshot shows a window titled "Specialty". Inside, there is a section labeled "Clinical Speciality". Within this section, there are four radio buttons: "Laboratory" (which is selected), "Medicine", "Radiology", and "Surgery". Below this section, there is another section with a radio button labeled "Progress Note". At the bottom of the window, there is a section labeled "User Defined" which contains two radio buttons: "Specialty / Category" and "Patient Photo ID".

- Laboratory
- Medicine
- Radiology
- Surgery
- Progress Note
- User Defined Specialty / Category
- Patient Photo ID's

After a specialty has been selected, the selection button for that specialty will be displayed on the main Capture window.

- **'Select Laboratory Specimen'** button will open the 'Anatomic Pathology Selection Window'.
 - Study Date and Accession No. are displayed.
 - Objective and Stain are displayed as input fields.
 - An entry is required in each of the input fields.
- **'Select Medicine procedure'** button will open the 'Medicine Procedure/Subspecialty list Window'.
 - Study Date is displayed.
 - No extra input fields are required.
- **'Select Radiology Exam'** button will open the 'Radiology Exam Selection Window'.
 - Study Date and Case Number are displayed.

- No extra input fields are required.
- **'Select Surgery Case'** button will open the 'Surgery Case List Window'.
 - Study Date is displayed.
 - No extra input fields are required.
- **'Select Progress Note'** button will open the 'Progress Notes list'.
 - Study Date is displayed.
 - No extra input fields are required.
- **'User Defined Specialty / Category'** was selected as the specialty.
 - There is no button.
 - The 'Study Date' edit field will be enabled.
 - Entering the date of the image is required.
 - **Note:** This is a VA FileMan date field; entering 'T', 'T-1' will work.
 - The 'Study Performed' field (which is normally disabled and displays the selected specialty) will be converted to a drop down list and enabled. A selection from the descriptive categories or a free text description is required.
 - **Note:** Entering free text into the edit box of the drop down list is possible but not recommended. If there isn't an appropriate category in the drop down list, it is preferred that the system manager be contacted.
- **'Patient Photo ID'** is selected
 - The 'Study Date' edit field will be enabled. Entering the date of the image is required.
 - **Note:** This is a VA FileMan date field; entering 'T', 'T-1' will work.
 - The Study will be 'Photo ID' and a default Image description will be inserted in the Image description field.
 - **Note:** Patient Photo ID's can only be saved as 'Single' images.

Notes:

- **VISTA** Imaging has the optional functionality of limiting a user's ability to capture images to certain specialties based on assigned Imaging Capture Keys.
- If a message window appears with the message 'You don't have the proper Security Keys to capture "specialty" Images', contact the system manager.
- If images are being captured for a Study Group and the Study is not yet complete, all Specialty choices will be disabled. The previous Study must be closed by clicking on 'Study Complete' before a new specialty can be selected.

H.3.4 Capture Configuration: Image Saved As:

- **VISTA** Imaging allows capturing images as Single images or as Study Groups.
- All Images in a Study Group are associated with the same patient and the same procedure. The procedure can be any of the Specialties that **VISTA** Imaging supports.
- During the process of capturing images for a Study Group, all settings and functions related to a Study Group are disabled.

The disabled settings and functions are...

- 'Patient' button.
- 'File|Select Patient' menu option.
- 'Select Procedure' button.
- 'Specialty'.
- 'Saving' (Image saved as single or group).
- 'Mode' (OnLine, Off Line or Test).
- The disabled settings displayed at the top of the main capture window and on the Workstation configuration window are changed from to a gray color to reflect the fact that they cannot be changed at this time.
- Disabling the settings is a safeguard against incorrectly associating multiple procedures or patients to the same Study Group.
- When the Study Group is closed all disabled controls and functions will be enabled.
- It may seem that the tabbing sequence changes during the capture of a Study Group, but that is not the case. Any disabled control is simply skipped.

H.3.5 Capture Configuration: Mode

This setting is rarely changed. It should be in On-Line (live) Mode.

On-Line (Live) Mode - It should be in On-Line (live) Mode for clinical image capture. On-Line (live) - is the normal mode of capture. In this mode, the workstation is connected to the **VISTA** Hospital Information System and has access to the Patient Database. Images will be saved to the patient record.

- **Off-Line** - (Not available in **VISTA** Imaging Version 2.5)
- **Test Mode** - The purpose of 'Test Mode' is to test an Input Source. To test a new capture board or scanner, click on 'Test' mode.

In test mode...

- Logon to the **VISTA** System is not required.

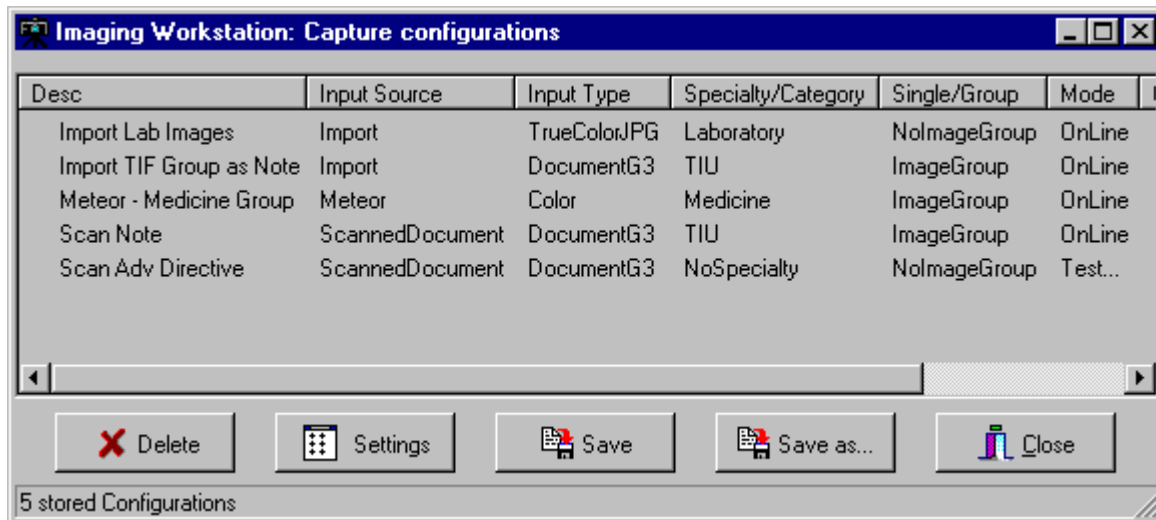
- Selecting a patient is not required.
- Images are not saved to the patient record.
- Images can be saved to the local hard drive by selecting the menu option 'Options | Save Image As'.

H.4 Configuration Buttons List Window

H.4.1 Configuration Buttons List

The VISTA Imaging System encompasses a way to quickly change to different settings. Select the 'Options|Configuration List' menu option from the main capture window to open the 'Imaging Workstation' Capture configurations window.

Note: All defined configurations will be displayed on the Configuration tool bar in the Main Capture Window.



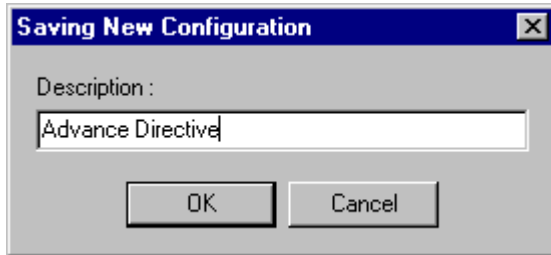
If a workstation has more than one Input Source and switching between them is common, or...

- This workstation switches between Specialties
- It is common to switch between film sizes of the Lumisys scanner
- It is common to switch between any settings...

...Then, Configuration Buttons will enable one-click settings changes.

H.4.2 Creating 'Configuration Buttons'

1. Open the 'Configuration Settings' window by clicking on the 'Settings' button.
2. Select the appropriate settings for Input Source, Specialty etc.
3. Click on 'Save As' to open the New Configuration window.



4. Enter a description of the configuration and click 'OK'.

The settings will be saved, and then displayed in the list.

5. Change the settings, and repeat creating 'Configuration Buttons' until the common configurations used on the workstation have been defined as 'Configuration Buttons'.

H.4.3 Deleting 'Configuration Buttons'

Click on an entry in the 'Configuration Buttons' listing and click on 'Delete'.

H.4.4 Modifying a Saved Setting

1. Select a list entry.
2. Change any settings in the Configuration Settings window.
3. Click the 'Save' button.

The list entry will be deleted and appended at the bottom of the configuration list.

H.4.5 Using 'Configuration Buttons'

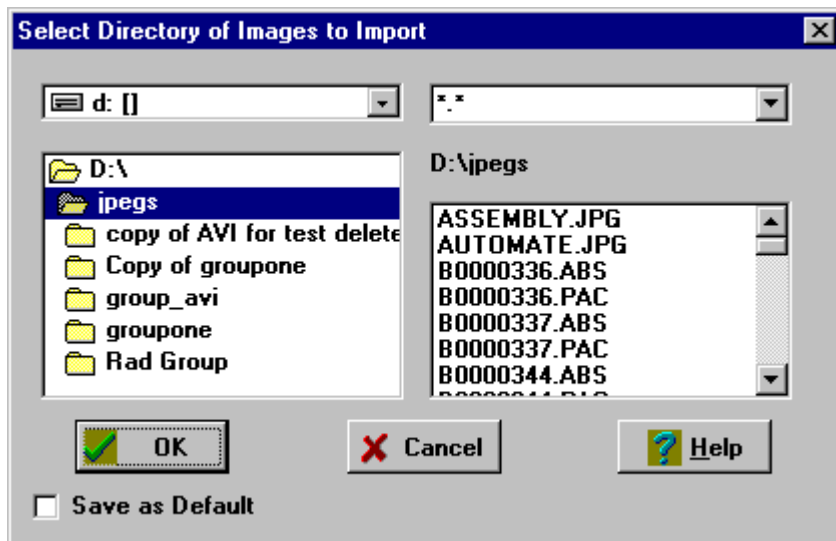
All 'Configuration Buttons' defined will be displayed on the Tool Bar in the Main Capture window. When a 'Configuration Button' is clicked, the configuration settings will change to reflect the settings of the saved configuration.

Note: When an entry in the list is selected, the settings in the Configuration Settings window and the Imaging Capture window will change to the selected configuration.

H.5 Select Directory of Images Window

VISTA Imaging Capture is in 'Import Mode' when 'Import' has been selected as the Input Source. In Import Mode, the directory of images to be imported must be identified.

1. Open the 'Select Directory of Images' window by...
 - Selecting the menu option 'Options|Import Directory', or...
 - Click on the Import directory that is displayed, or...
 - <right click> on the Import directory file list
2. Select the Drive, Directory and file mask (*.TIF). The images in that directory matching the mask will be displayed in the file list box (see Note).
3. Click the 'OK' button and the image files will be redisplayed in the Import directory file list box on the Main Capture window.



Note:

- The images displayed in the file list box in this window are for display purposes only. Images aren't selected from this window, just the directory.
- If 'Save as default' is checked, the

Drive, Directory and file mask will be saved by the system and used as defaults the next time this window is opened.

- File mask or file filters are used to limit which files will be displayed in the file list box. the most familiar mask is '*. *'. This will display all files. Alternate masks can be typed, or selected from the list.

H.6 Medicine Procedure/Subspecialty List Window

The Medicine Procedure/Subspecialty List Window can function two ways, depending on which Selection Option is selected.

Medicine Procedure/Subspecialty list

File Options

Select Procedure/Subspecialty

COL
CONSULT
ECG
ECHO
EEG

Procedure/Subspecialty Date/Time

FEB 26, 1993@11:49	COL	FRED, CONNERS
MAR 03, 1993@22:00	COL	FRED, CONNERS

Patient : FRED, CONNERS

Procedure/Subspecialty : COL **COLONOSCOPY**

Date/Time :

Date/Time for New Proc. :

Selection Options

☐ Create New procedure for selected subspecialty

☒ List existing Procedure Date/Times for selected subspecialty

☐ Create 'NEW' procedure now, Don't wait until Image is saved.

☒ OK ☐ Cancel

2 COL Procedures found for Patient FRED, CONNERS

The Selection Options group has two radio buttons:

- Create New Procedure for selected Subspecialty
- List existing Procedure Date/Times for selected Subspecialty

To create a new procedure for a selected Subspecialty, check the box labeled 'Create New Procedure for Selected Subspecialty' immediately. **Do Not wait until an image is saved.**

- When this option is checked, a new procedure entry will be created in the Medicine package when a Procedure/Subspecialty is selected and the 'OK' button is clicked. The current date/time will be used for the new procedure.

- If this option is unchecked, A 'New' procedure is not created until the first image for the procedure is saved by clicking 'Image OK' on the main capture window.

If "List existing Procedure Date/Times for selected Subspecialty" is selected, a patient's procedure can be selected as follows:

1. Double click a Subspecialty. This action loads the Procedure/Subspecialty Date/Time list with patient procedures.
2. Select a Procedure Date/Time from the list and click 'OK'.

Note:

- The selected Procedure/Subspecialty will remain selected when this window is opened again.
- The Procedure/Subspecialty list can be limited to certain procedure types based on assigned 'Imaging Capture Keys'. For example, clinicians can limit their list to only GI procedures. Further limiting of the Subspecialties listed is being considered for a later version of Imaging.

H.7 Anatomic Pathology Specimen Selection Window

The "Anatomic Pathology Specimen Selection Window" will be opened when 'Select Laboratory Specimen' button is clicked from the **VISTA** Imaging System - Capture window.

To select a lab specimen...

1. Select the section from the section drop-down list box.
2. Enter the accession year and the number.
3. Click on the 'Search' button. The specimens will be listed.
4. Select a specimen from the list.
5. Click the 'OK' button.

Anatomic Pathology Lab Selection

File Options Help

Section: Accession Year, Number Search

Name	SSN	Date/Time	Acc #	Pathologist	Specimen
DEMO,JANE	459887777	05/06/1997	SP 97 3	NOSS,ROD	LEFT TONSIL
DEMO,JANE	459887777	05/06/1997	SP 97 3	NOSS,ROD	RIGHT TONSIL

OK Cancel Help

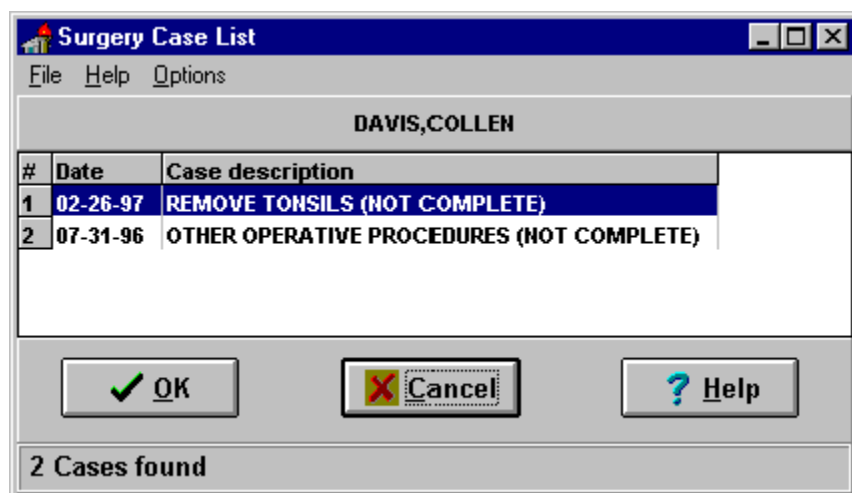
2 Entries returned

Notes:

- A Patient does not have to be selected before the Anatomic Pathology Specimen Selection Window is opened. The patient will be determined from the Section, Accession year and number. This functionality is different from most selection windows where the patient must be known. The patient's name and SSN will be displayed on the list.
- When focus is on the 'Section' drop down list, choose a section by clicking with the mouse, or entering the first character of the section or by using the 'down' and 'up' arrow keys.
- When focus is on the Accession Year or Number fields, use the 'up' arrow key to increment the number by 1 or the 'down' arrow key to subtract 1 from the number.
- Pressing <Enter> in any of the 3 entry fields (section, accession year, number) will start the search.
- Click on the Search Button to start the search.

H.8 Surgery Case List Window

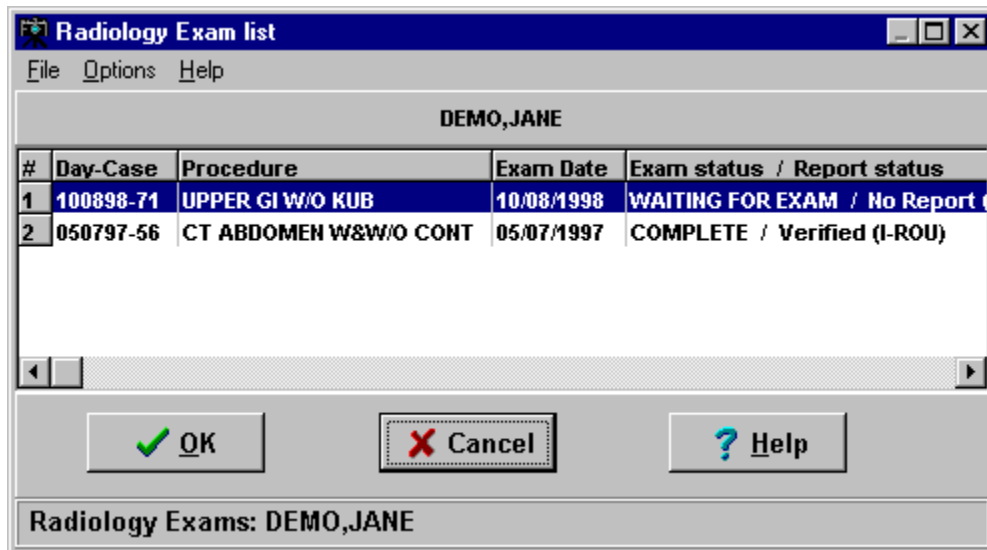
The function of the Surgery Case List Window is to select a Surgical case to be associated with the captured images. The patient's surgical cases will be listed. Simply select an entry from the list and click on the 'OK' button.



Note: The widths of the columns can be changed by selecting the column dividers and dragging them to the left or right.

H.9 Radiology Exam Selection Window

The patient's radiology exams will be listed. Select an entry from the list and click 'OK' to select it.



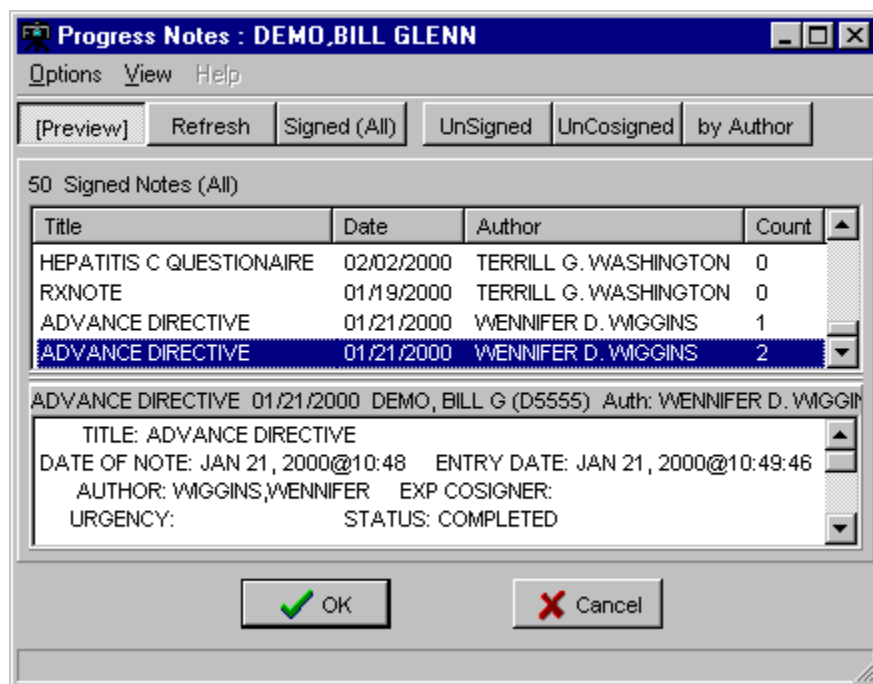
Notes:

- If an exam has images to which it is associated, an '(I)' will be displayed after the exam status.
- The widths of the columns can be changed by selecting the column dividers and dragging them to the left or right.
- There are alternate ways to select an exam from the list.

H.10 Progress Note Listing Window

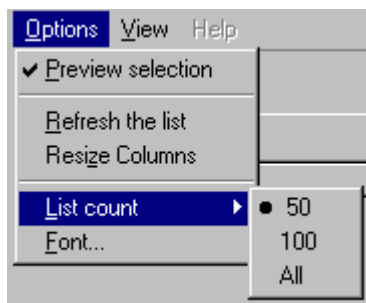
From the VISTA Imaging System - Capture window click the 'Select Progress Note' button to open the "Progress Notes selection Window".

Select the Note to be associated with the captured image, and click on 'OK'.

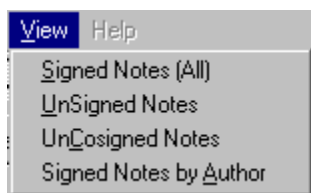


The buttons at the top all have related menu options.

H.10.1 Progress Note Listing Window Menu Options



- **"Preview"** shows/hides the Progress Note viewer.
- **"Refresh"** gets the latest list from VISTA.
- **"Resize"** adjusts the widths of all columns so the longest entry is visible
- **"List Count"** selects how many of the most recent Notes to list.
- **"Font"** changes the window font.



- **"Signed Notes (All)"** Lists most recent notes.
- **"Unsigned Notes"** Lists most recent Unsigned notes.
- **"UnCosigned Notes"** Lists most recent UnCosigned notes.
- **"Signed Notes by Author"** Lists most recent notes signed by the selected Author.

Note: When 'Signed Notes by Author' is selected, a selection window will open. Select an author and the list will be limited to notes of that author.

H.11 AT-VISTA Frame Grab Capture Window

The AT-VISTA Capture board can be setup for interactive capturing or for non-interactive capturing.

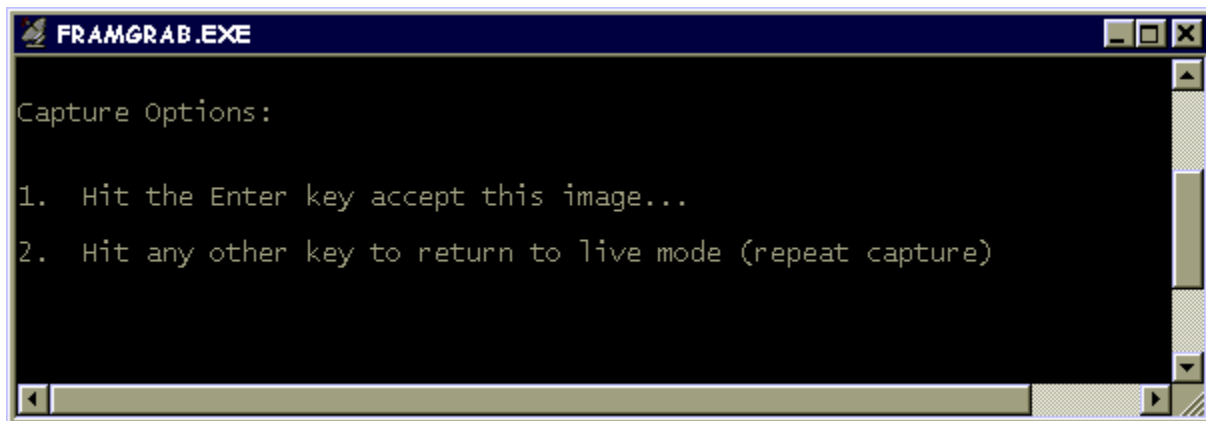
H.11.1 Interactive Mode

Interactive mode should be used when capturing from an active or moving video input. When the 'Capture' button is clicked, a live image will appear on the separate Image monitor. A window (with name FRAMGRAB.EXE) will open on the VGA monitor displaying the Prompt: 'Hit any key to freeze the image.. Press any key when to capture the Image.



After the image has been frozen, there are two choices:

- Accept the image by pressing <Enter>.
- Return to live mode by pressing any other key.



If 'accept this image' is selected, control will return to the Capture Window. The Image will be displayed in the Image Box. Click the 'Image OK' button if the image quality is acceptable or click 'Cancel' button to discard the image.

If 'return to live mode' is selected, repeat the capture process until an acceptable image is obtained. Sometimes this requires several tries, if the field is moving.

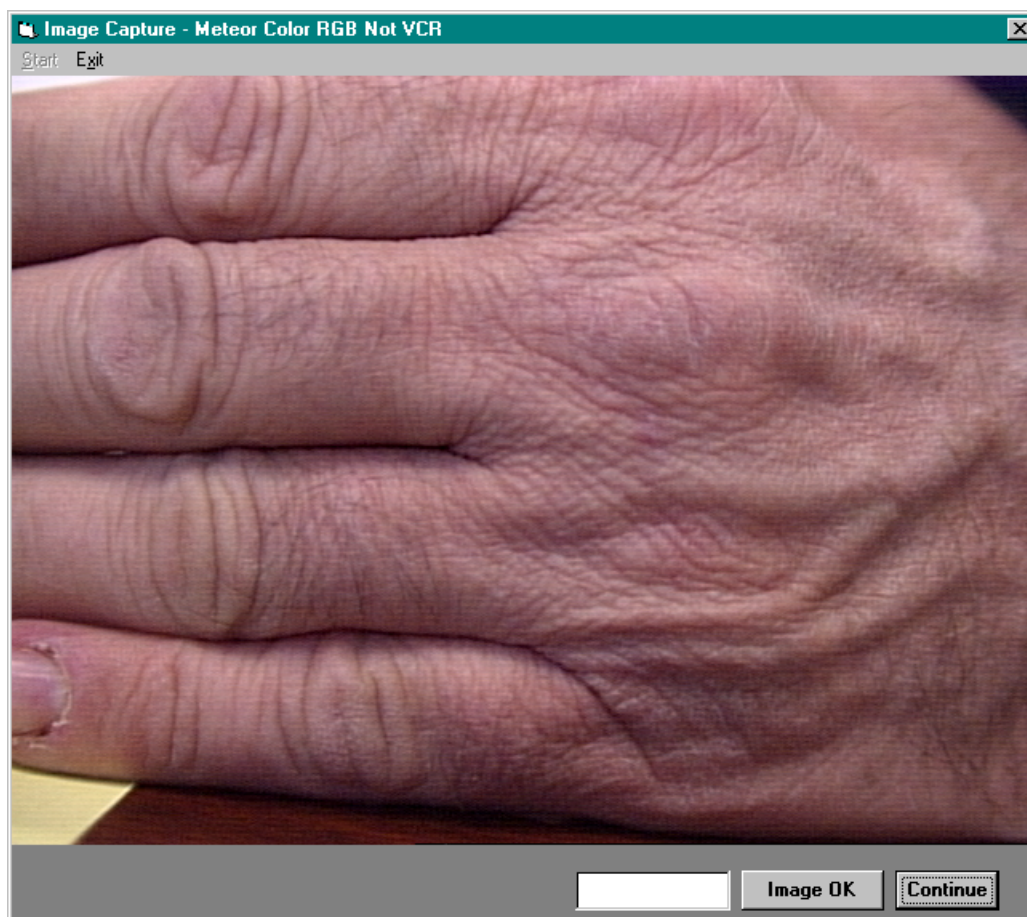
H.11.2 Non-Interactive Mode:

Non-interactive mode should be used when the input device freezes the image itself. A still image will be captured which has already been verified for quality. When the 'Capture' button is clicked, there will be a pause and then the captured image will appear in the image display box of the capture window.

H.12 Meteor Capture Window

If a Meteor board is the input device, a window will open on the workstation displaying the live image. Click on the Freeze button to capture the image. If the image is not of good quality, click on the Continue button, and the window will again display a live image, without performing a capture.

When the captured image is of satisfactory quality, click on the Image OK button. The Capture Window will then move in front of the Meteor Window. The captured image will appear in the Image Box of the Capture Window. Click on Image OK to save the image to the patient's record. Click on Cancel to discard the image. Click on the 'Capture' button again to repeat the process.



H.12.1 Button Descriptions



The Freeze button stops the motion in the Meteor Image Box and presents the still image to be saved.



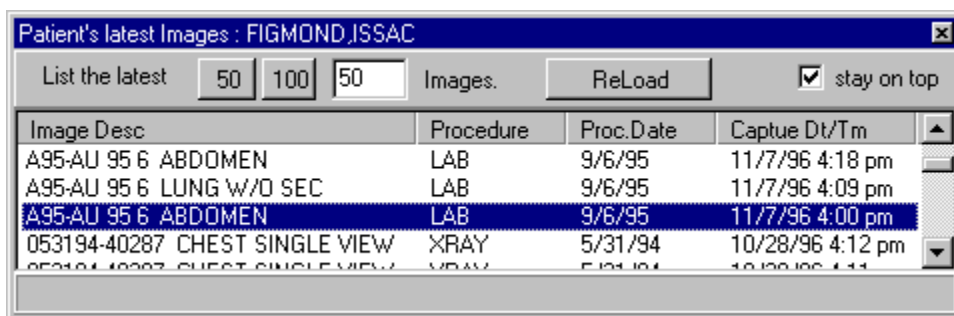
The Image OK button should be clicked when the image shown in the Meteor Image Box is acceptable.



If the image shown in the Meteor Image Box is not acceptable, click on the Continue button to start the full motion picture again so you can repeat the capture.

H.13 Capture Window - Viewing Patient's Images

1. Select the menu option 'File|Latest Patient Images'. The latest patient images will be listed here.



The list is sorted by the Capture Date/Time property, with the latest images at the beginning of the list. Images that were just captured have been stored in the VISTA Imaging Files. Use this list as a check to make sure the Images captured this session have been filed or to view previous patient images.

2. Click on one of the image descriptions and the image will be displayed in the image box.

Notes:

- Image Groups are not listed as a single entry; each image in the Group is listed.
- While viewing patient images, the Image Box will appear recessed, and the Capture button will be disabled.
- To continue capturing images, click 'Cancel' button. this will cancel the displaying of patient images and enable the 'Capture' button.

H.14 Study Group Complete Window

When the 'Study Complete' button on the Main Capture window is clicked, the 'Study Group is Complete' window is opened.

Study Group is Complete

Study Group: "XRAY"
Patient : "FRED,CONNERS"
Image Count: 5
CLOSE the Study Group ?

Study Group Short description: (60 char max)
121092-2 CHEST VIEWS FOR CONNERS

Study Group Long description:
Physician can enter a long description for the Study Group that was just captured.

OK Cancel Help

Information about the Study is displayed in the top panel of the window. The Study description and Study long description are displayed in edit boxes.

1. Click the **'OK'** button to accept the data.
2. Click the **'Cancel'** button to return to the Main Capture Window without closing the study.

The Study Description and/or Study Long Description can be edited.

Use the <TAB> key to move focus between Study Group short description and Study Group Long description.

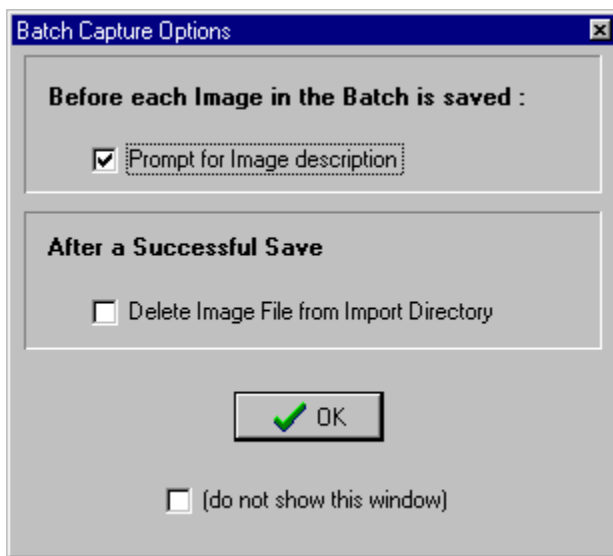
Notes:

- The text for the Study Group description and Study Group long description is copied from the description and long description of the first image captured for this study group.
- When viewing an Image Report for a Study Group the long descriptions of all images in the group are displayed first in the report window. The Specialty report is displayed next.
- Pressing <Enter> while editing the long description will not close the window, even though the 'OK' button is defined as the default button for the window, because in a long description field the <Enter> key acts as a carriage return, line feed.

- If an attempt is made to close the main capture window without closing the Study Group, the 'Study Group is Complete' window will be displayed. The Main Capture window will NOT close if a Study Group is not complete.

H.15 Batch Capture Options Window

- If 'Import' has been selected as the Input Type (Input Source), the Batch Capture option will be available.
- Batch capturing provides the capability of selecting multiple images from an import directory and has them all saved to an Image Group when 'Image OK' is clicked. See Importing Images for more details.
- Clicking on the check box or the 'Options|Batch Capture Options' menu option will open the 'Batch Capture Options' window.



- **'Prompt for Image description'** provides the opportunity to enter a different description for each image. If this is not checked, all images will have the same short description.

Note: when 'prompt for image description' is checked the 'Batch Capture image description' window will be displayed before each image is saved to the **VISTA** Image File.

- **'Delete Image File from Import Directory'** will delete the Image File from the workstation directory.

Caution: Be sure of this function. If this is checked, all the Images that are successfully imported **WILL BE DELETED** from the import directory.

- Check the **'do not show this window'** checkbox and the 'Batch Capture Options' window will not be displayed when the 'Batch' check box is checked from the main capture window.

Note: The 'Batch Capture Options' window can be displayed by selecting the 'Options|Batch Capture Options' menu item.

H.16 Confirmation Window

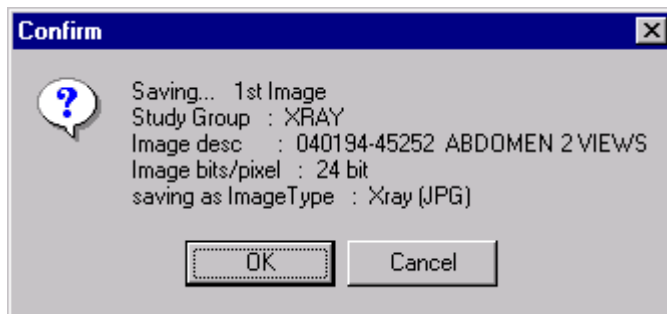
The 'Confirmation window' displays the Image data that is about to be saved to the patient record.

When 'Image OK' is clicked, a validity check is performed on the input data.

If the input data is valid, then the Confirmation Window will display.

Click 'OK' to save the Image to the patient record.

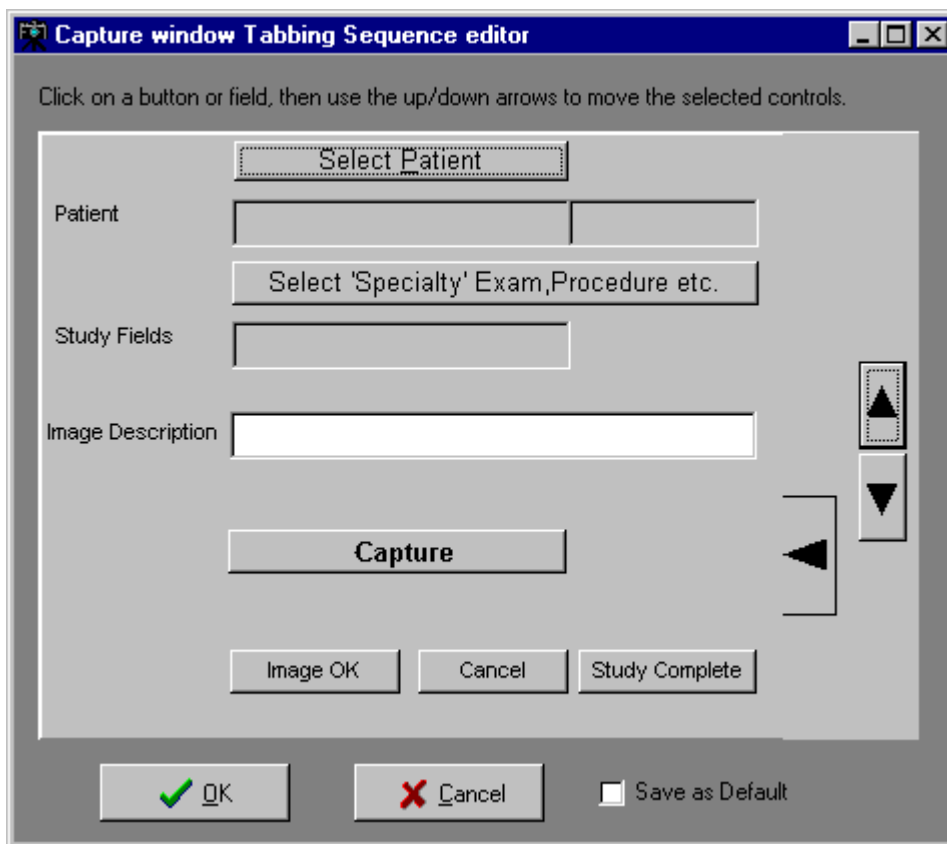
Click 'Cancel' to stop the process and return to the capture window.



Note: The Confirmation Window is only displayed if the menu option 'Options|Show Confirmation messages' is checked.

H.17 Tabbing Sequence Window

1. From the Main Capture window, select the menu option 'Options| Field 'Tabbing' Sequence' to open this window.
 - The order that data is entered, patient selected, procedure selected and image is captured can be defined for the workstation. Usually the patient is selected first, but sometimes, as with Anatomic pathology, the patient isn't known until after the lab specimen is viewed and report has been selected from the Lab Package.
 - To change the order in which the fields are displayed, click on a field. The left arrow shows which fields are currently selected. Click on the Up-Arrow and Down-Arrow buttons to move the selected field.



2. Click 'OK' to save the changes or 'Cancel' to discard any changes.
3. Check 'Save as Default' to save this field order as the default for this workstation.

Note: In VISTA Imaging the 'tabbing sequence' of the controls is always top to bottom. When the control position is changed the tabbing sequence is changed to reflect the new placement of controls.

Appendix I Database Integrity Error Messages

I.1 Introduction

As part of Patient Safety measure the **VISTA** Imaging software has tools available to scan the database for possible patient mis-match entries. The Imaging Display software will display error messages on any image selected that has possible patient information mismatched either in the **VISTA** database or the image files saved on the network. All images that have a questionable database error will be blocked from display.

Database scanning tools are provided when the Background Processor Verifier is used as well as menu options (MUMPS) that run on the **VISTA** servers. These options are described in detail in the Imaging Technical manual under chapter ‘Database Integrity Checking’. This appendix will identify the possible error messages that are displayed both in the Imaging Display and Capture software. All error message will display in a pop-up window and will have the caption “QUESTIONABLE INTEGRITY”.

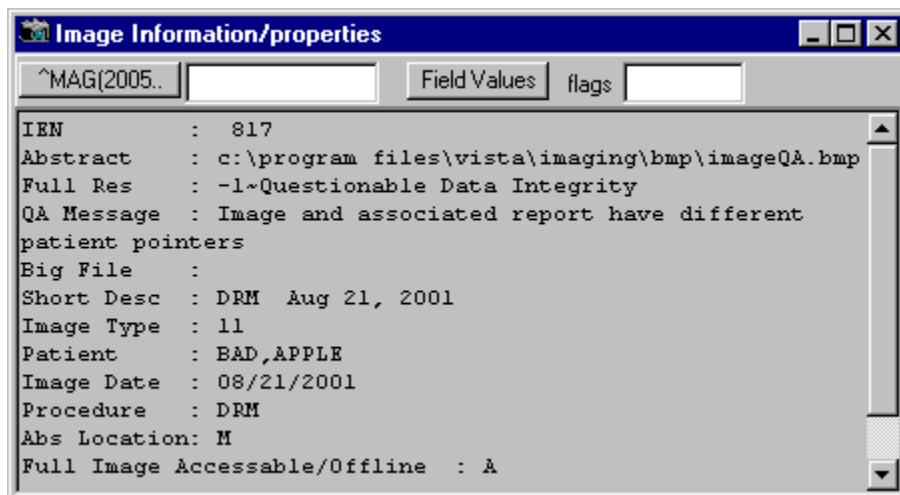
I.2 Error Messages on Display

I.2.1 Abstract Window

The abstract window may display any of the following error messages on images that have a questionable integrity error. All database scanning is from the Image file to the associated Application report entry. Application report entries are the report entries that the images are associated to such as Radiology, Medicine, TIU, Laboratory, and Surgery.



The above image bitmap is displayed on any of the Display software’s “Abstract” windows. The indication is that there is a possible patient mismatch for the image. Images will be blocked from viewing.



Selecting the Image Information option, available if user has the MAG SYSTEM security key, on the above image bit map will display the above also indicating the possible error. Please take notice of the information provided in the 'Full Res' caption, '-1~Questionable Data Integrity. This normally will display the full file path of the image. Also notice that the "QA Message" caption will display the message regarding the QA problem it encountered is displayed in the "QA Message" caption



The above error message is displayed when attempting to display the report associated to an image that has a questionable integrity problem. This is the result of the image entry and the associated report entry has different patient pointers.



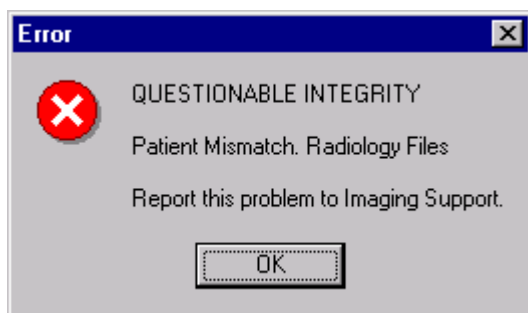
The above error message is displayed when attempting to display the report associated to an image that has a questionable integrity. This is the results of the associated report entry does not point back to the Image entry selected.

I.2.2 Radiology Exam Listing

The Radiology Exam listing window will display any of the following error messages and the integrity checks are from the Radiology report database to the Image file database.

Radiology Exam listing : BAD_APPLE					
Radiology Exams: BAD,APPLE					
#	Day-Case	Procedure	Exam Date	Exam status / Report status	Imaging Loc
1	082101-83	CT ABDOMEN W/CONT	2001 - 08/21	Patient Mismatch. Radiology Files	TD-MAINRAD
2	082101-58	CHEST 2 VIEWS PA&LAT	2001 - 08/21	WAITING FOR EXAM / Verified (I)	TD-MAINRAD

The Radiology Exam listing window will display patient mismatch information under the column 'Exam status / Report status'.



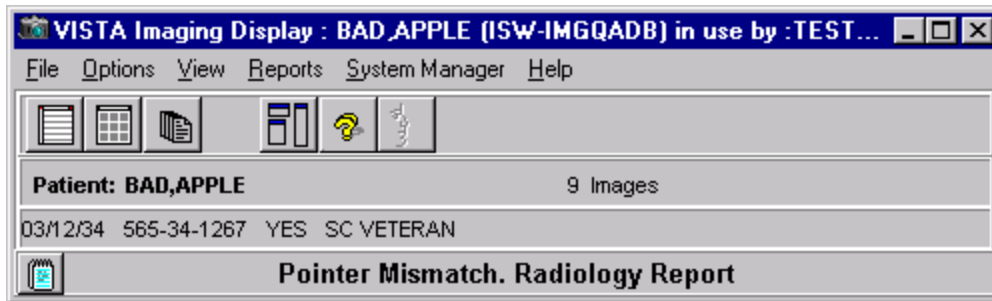
The above error message is displayed when attempting to display the images and/or the report from the selected radiology exam on the Radiology Exam listing window. The Radiology Patient file entry has a different patient than what is stored in Radiology Report file. This will block the display of the report as well as the images.

I.2.3 CPRS/Radiology Images

A database scan is also done when viewing images from the CPRS interface. The error message is displayed in lower portion of the window.



The above error message “Patient Mismatch. Radiology File” is the result of the Radiology report file has a different patient entry than what the Image file does.



The above error message "Patient Mismatch. Radiology Report" is the result of the Radiology files has consistent patient pointers but the Image file entry does not point back to the Radiology report entry selected on the CPRS chart.

I.2.4 - Radiology View window

The Radiology view window has a built-in scanning function to compare the SSN filed with the image against the security number of the selected patient.



The above error message will display if there is a mismatch on the patient's social security number. Consequently, display of the information will be blocked.

Glossary

Annotation	The ability to attach notes to images.
Architecture	The design of the components of a computer, network, or software system.
Archive	The long term storage of data or images.
Audit trail	Record of activity on a particular file or computer.
Background processing	Simultaneous running of a “job” on a computer while working on another job. Examples would be printing one document while working on another, or the software may do automatic saves while you are working on something else.
BLOB	Stands for Binary Large Object and refers to the non-textual elements of a mail message.
Brightness	The balance of light and dark shades in an image.
Composite video	TV signal which sends all colors, and vertical and horizontal signals together.
Contrast	Range between the lightest and darkest tones in an image.
Density	The degree of darkness in an image.
DHCP	Decentralized Hospital Computer Program, the earlier name of the VA's hospital information system, now called VISTA .
DICOM	Digital Imaging and Communications in Medicine. A medical imaging standard, DICOM is standard for Radiology equipment and is being adopted by the other members of the medical imaging community.
Digital camera	A camera that transforms a picture into a system of numbers. The picture can then be manipulated pixel (dot) by pixel, and stored and transmitted in the manner as textual data.
File	All the data that describes a document or image.
File protection	Techniques for preventing files from being erased.
File server	A machine where shared software is stored.

Frame grabber	A device that changes a video picture into a digital computer language.
Gray scale	The range of shades of black in an image. The more shades recognized by the device, the clearer and sharper the image will be.
High resolution	Refers to a better quality of display over the original achieved by increasing the number of pixels (dots) per inch.
Hot spot	The single pixel that is activated by selection using a mouse, light pen, or other means.
Image	The computerized representation of a picture, or graphic.
Image abstract	A “thumbnail” version of an image, which requires less computer processing resources to display than the actual image.
Image group	A group of images associated with a medical examination.
Image processing	The translation of an image into a digital computer language so that it may be manipulated in size, color, clarity, or to enhance portions of it.
Image resolution	The fineness or coarseness of an image.
Imaging system	Collection of units that work together to capture and recreate images.
Jitter	The flickering of a displayed image.
Jukebox	A device that holds multiple optical discs and can swap them in and out of the drive as needed.
Login (Logon)	Procedure for gaining access to the system or program.
Mouse	Hand driven input and pointing device.
Multimedia	Combining more than one media for the dissemination of information (i.e., text, graphics, full video motion, audio).
On-line	Something that is available for access on the system.
Optical disc	A direct access storage device that is written to and read by laser light. Optical discs have greater storage capacity than magnetic media. Many optical discs are Write Once Read Many (WORM).

Pan	To view different parts of the image that extends beyond the borders of the screen.
Pixel	The individual dots that define a picture.
Resolution	Measure of output quality (dpi—dots per inch) or halftone quality (lpi—lines per inch).
Retrieval	The ability to search for, select, and display a document or image from storage.
RGB	Red, Green, Blue. The colors used in varying combinations and intensities on monitors, TV screens, etc.
Scaling	Uniformly changing the size of an image.
Scanner	A device that converts a hardcopy image into machine-readable code.
Server	A computer that is dedicated to one task.
Storage media	The physical device onto which data is recorded.
TWAIN	An interface standard for scanners, cameras and other input devices.
User preferences	The preferences that each user sets in the User Preferences window that control the circumstances and ways in which the Imaging package displays images.
Video camera	Camera which records full motion video.
Video digitizer	A device that changes a video picture into a digital computer language.
VISTA	<u>V</u> eterans Health <u>I</u> nformation <u>S</u> ystem <u>T</u> echnology <u>A</u> rchitecture. VISTA replaces DHCP.
Workstation	A computer that is dedicated to a single type of task.
Write Once Read Many (WORM)	Once written to the disc, data is only available for reading and cannot be altered.
WYSIWYG	“What you see is what you get.” The feature of seeing images and text exactly as they will look when printed or transmitted.

Zoom	To enlarge an image or a portion of an image.
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